CHAPTER 10: PUBLIC COMMENT AND RESPONSE

10.1 INTRODUCTION AND COMMENT DOCUMENT INDEX

10.1.1 Process for Notification and Comment

Western Area Power Administration (Western) involved a range of agencies, Tribes, and public constituencies in review of the Grapevine Canyon Wind Draft Environmental Impact Statement (Draft EIS). To prepare, postcards were mailed or emailed to approximately 350 entities prior to the issuance of the Draft EIS to ask if and how they would like to receive the Draft EIS. Upon issuance of the Draft EIS, the U.S. Environmental Protection Agency published a Notice of Availability (NOA) for the Draft EIS in the Federal Register on July 23, 2010 (Vol. 74, No. 141, page 43161). The NOA also announced a 45-day comment period for receipt of comments. Locally, Western published a display ad and Coconino National Forest (Forest) published a legal notice in the Arizona Daily Sun with the NOA information, and announcements of two public hearings held on August 17 and 18, 2010, in Mormon Lake and Flagstaff, respectively. Western also provided notification of the issuance of the Draft EIS and the hearings to entities with email addresses. Compact discs and/or hard copies of the document were mailed to 108 agencies, Tribes, organizations, and individuals. Copies of the Draft EIS were also available at the Forest Supervisor's Office in Flagstaff, the Flagstaff and Winslow Public Libraries, and Western's Desert Southwest Regional Office in Phoenix, Arizona. The Draft EIS was also posted on Western and Forest websites.

10.1.2 Process for Tracking Comments and Responding

Western received 15 comment documents (letters, emails, comment card, and hearing testimony) as of September 7, 2011. It received three additional agency documents as of September 13, 2010 and included these in its review. All materials are listed in Table 10.1-1, the Comment Document Index (Index), below and reproduced in Section 10.3.

From the comment documents, Western identified and bracketed 126 substantive comments. Each comment was given a unique identifier consisting of a letter (describing the type of entity) and a sequential number. Each comment is listed in the Index at Table 10.1-1 below. Western organized the comments into three broad areas of interest and developed tables with the comments and agency responses:

- Table 10.2-1 Project Description
- Table 10.2-2 Resource Protection Measures (RPMs)
- Table 10.2-3 Resource Analysis

10.1.3 Finding Comments and Responses

Use the Index, Table 10.1-1 below, to locate the comment response table and sub-topic where the comments are located. Within each table, sub-topics are presented in roughly the same order as they appear within the EIS. Specific comments are reproduced (either verbatim or summarized) in the appropriate Table along with the agency's response. Some comments have been clustered because Western's response is pertinent to the group. If there seems to be no response to the right of a comment, look above it for the relevant global response. Many comments resulted in changes to the Draft EIS in terms of factual content or analysis. In these cases, the location of the revision is provided both in a separate column and within the body of the response. Various acronyms are used to help keep the tables brief and precise. Here is a list for reference:

ABPP	Avian and Bat Protection Plan
AGFD	Arizona Game and Fish Department
APLIC	Avian Power Line Interaction Committee
ASLD	Arizona State Land Department
ATC	Available Transmission Capacity
Balancing Authority	Western Area Lower Colorado Balancing Authority
BA	Biological Assessment
BFD	Bird Flight Diverters
BGEPA	Bald and Golden Eagle Protection Act
BMPs	Best Management Practices
CEQ	Council on Environmental Quality
CO	Carbon Oxide
CO_2	Carbon Dioxide
CREDA	Colorado River Energy Distribution Association
CRSP	Colorado River Storage Project
CWA	Clean Water Act
Draft EIS	Draft Environmental Impact Statement
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
Final EIS	Final Environmental Impact Statement
FSH	Forest Service Handbook
Forest Service	Coconino National Forest
GHG	Greenhouse gas
HPTP	Historic Properties Treatment Plan
Index	Comment Document Index
LGIP	Large Generator Interconnection Procedures
MET	Meteorological Tower
MBTA	Migratory Bird Treaty Act
mph	Miles per hour
MW	Megawatt
MWh	Megawatt hours
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NGO	Non-governmental Organization
NLCD	National Land Cover Database
NOA	Notice of Availability
NO_x	Nitrogen Oxide
NRHP	National Register of Historic Places
OASIS	Western's website
OATT	Open Access Transmission Service Tariff
PA	Programmatic Agreement
PM_{10}	10-micron particulate matter
ROD	Record of Decision
RPA	Rural Planning Area
RPM	Resource Protection Measure
SO_2	Sulfur Dioxide
SRP	Salt River Project
TES	Threatened and Endangered Species
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Services
Western	Western Area Power Administration
WECC	Western Electricity Coordinating Council
WTG	Wind turbine generator

TABLE 10.1-1
COMMENT DOCUMENT INDEX

Commenter	Document Number	Comment Date	*Table 10.2-1 Proposed Project*	*Table 10.2-2 Resource Protection Measures*	*Table 10.2-3 Resource Analysis*
Meteor Crater Enterprises Inc.	B-1	8/16/10			B-1.1 - Visual Resources
Mr. Ty Rock	C-1	8/18/10	C-1.1- Site Access C-1.2- Decommissioning		
Mr. Ty Rock	C-2	8/24/10	C-2.1- Site Access C-2.2- Site Access C-2.6- Post-Construction Restoration C-2.8- Decommissioning C-2.10 - Project Feasibility	C-2.3 - Minimizing Wildlife Impacts C-2.4 - Pre-construction Wildlife Surveys and Post-construction Monitoring Studies C-2.5 - Mortality Mitigation	
U.S. Bureau of Land Management, Phoenix District	F-1	8/15/10			F-1.1 - Biological Resources – Assessment of Impacts
U.S. Fish & Wildlife Service, Arizona Office	F-2	9/8/10		F-2.1 - Trench Work F-2.2 - Use of Guy Wires F-2.5 - Migratory Bird Protection F-2.6 - Scheduling Construction and Operation F-2.8 - Golden Eagle F-2.12 - Pre-construction Wildlife Surveys and Post-construction Monitoring Studies F-2.13 - Facility Design F-2.14 - Pre-construction Wildlife Surveys and Post-construction Monitoring Studies	F-2.3 - Biological Resources – Assessment of Impacts F-2.4 - Biological Resources – Raptors and Other Birds of Concern F-2.7 - Biological Resources – Assessment of Impacts F-2.10- Biological Resources – Assessment of Impacts F-2.11 - Biological Resources – Raptors and Other Birds of Concern F-2.27 - Biological Resources – Raptors and Other Birds of Concern
U.S. Department of Interior, Office of the Secretary	F-3	9/10/10			F-3.1 - Biological Resources – Bats F-3.2 - Biological Resources – Bats F-3.9 - Biological Resources –

TABLE 10.1-1
COMMENT DOCUMENT INDEX

Commenter	**Document Number**	**Comment Date**	*Table 10.2-1 Proposed Project*	*Table 10.2-2 Resource Protection Measures*	*Table 10.2-3 Resource Analysis*
					Raptors and Other Birds of Concern
U.S. Environmental Protection Agency, Region 9	F-4	9/13/10	F-4.1 - Project Description F-4.2 - Alternatives F-4.25 - Decommissioning	F-4.10 - Ground Disturbance F-4.11 - Golden Eagle F-4.13 - Golden Eagle F-4.14 - Pre-construction Wildlife Surveys and Post-construction Monitoring Studies F-4.15 - Pre-construction Wildlife Surveys and Post-construction Monitoring Studies F-4.16 - Threatened and Endangered Species F-4.18 - Migratory Bird Protection F-4.19 - Migratory Bird Protection	F-4.3 - Water Resources – Wetlands F-4.4 - Water Resources – waters of the U.S. F-4.5 - Water Resources – waters of the U.S. F-4.6 - Water Resources – waters of the U.S. F-4.7 - Water Resources – waters of the U.S. F-4.8 - Water Resources – waters of the U.S. F-4.9 - Water Resources – waters of the U.S. F-4.10 - Water Resources – waters of the U.S. F-4.12 - Biological Resources – Raptors and Other Birds of Concern F-4.17 - Biological Resources – Assessment of Impacts F-4.20 - Air Quality – Emissions Analysis F-4.21 - Air Quality – Emissions Mitigation F-4.22 - Air Quality – Climate Change F-4.23 - Cultural Resources – Gov't to Gov't Consultation F-4.24 Cumulative Effects-
Arizona Wildlife Federation	O-1	9/7/10		O-1.1 - Big Game	O-1.2 - Water Resources – Wetlands

TABLE 10.1-1
COMMENT DOCUMENT INDEX

Commenter	**Document Number**	**Comment Date**	*Table 10.2-1 Proposed Project*	*Table 10.2-2 Resource Protection Measures*	*Table 10.2-3 Resource Analysis*
Sierra Club, Grand Canyon Chapter	O-2	9/7/10		O-2.1 - Scope of Resource Protection Measures O-2.3 - Pre-construction Wildlife Surveys and Post-construction Monitoring Studies O-2.4 - Facility Design O-2.5 - Facility Design O-2.6 - Facility Design O-2.7 - Facility Design O-2.8 - Scheduling Construction and Operation O-2.9 - Scheduling Construction and Operation O-2.11 - Big Game O-2.12 - Scheduling Construction and Operation O-2.14 - Minimizing Wildlife Impacts O-2.17 - Revegetation O-2.18 - Scope of Resource Protection Measures	O-2.2 - Biological Resources – Assessment of Impacts O-2.15 - Biological Resources – Big Game O-2.16 - Biological Resources – Assessment of Impacts
Arizona Department of Environmental Quality	S-1	8/11/10			S-1.1 - Air Quality – Emissions Analysis S-1.2 - Air Quality – Emissions Mitigation S-1.3 - Air Quality – Emissions Mitigation
Arizona Game & Fish Department	S-2	9/1/10	S-2.6 - Project Description	S-2.2 - Pre-construction Wildlife Surveys and	S-2.1 - Biological Resources – Bats S-2.7 - Biological Resources –

TABLE 10.1-1
COMMENT DOCUMENT INDEX

Commenter	**Document Number**	**Comment Date**	*Table 10.2-1 Proposed Project*	*Table 10.2-2 Resource Protection Measures*	*Table 10.2-3 Resource Analysis*
			S-2.26 - Site Access	Post-construction Monitoring Studies S-2.3 - Pre-construction Wildlife Surveys and Post-construction Monitoring Studies S-2.4 - Minimizing Wildlife Impacts S-2.5 - Pre-construction Wildlife Surveys and Post-construction Monitoring Studies S-2.8 - Golden Eagle S-2.18 - Use of Guy Wires S-2.19 - Pre-construction Wildlife Surveys and Post-construction Monitoring Studies S-2.20 - Big Game S-2.21 - Facility Design S-2.22 - Scheduling Construction and Operation S-2.23 - Revegetation S-2.24 - Revegetation S-2.25 - Trench Work	Raptors and Other Birds of Concern S-2.9 - Cumulative Effects S-2.10 - Biological Resources – Big Game S-2.11 - Biological Resources – Raptors and Other Birds of Concern S-2.12 - Biological Resources – Bats S-2.13 - Biological Resources – Bats S-2.14 - Biological Resources – Bats S-2.15 - Biological Resources – Bats S-2.16 - Biological Resources – Bats S-2.17 - Biological Resources – Bats
White Mountain Apache Tribe Heritage Program	T-1	7/27/10			T-1.1 - Cultural Resources – Gov't to Gov't Consultation
Hopi Cultural Preservation Office	T-2	9/7/10	T-2.5 - Alternatives T-2.8 - Alternatives T-2.9 - Project Description	T-2.6 - Golden Eagle	T-2.1 - Cultural Resources – Analysis of Impacts T-2.2 - Cultural Resources – Gov't to Gov't Consultation T-2.3 - Cultural Resources –

TABLE 10.1-1
COMMENT DOCUMENT INDEX

Commenter	**Document Number**	**Comment Date**	*Table 10.2-1 Proposed Project*	*Table 10.2-2 Resource Protection Measures*	*Table 10.2-3 Resource Analysis*
					Analysis of Impacts T-2.4 - Cultural Resources – Analysis of Impacts T-2.5 - Cultural Resources – Analysis of Impacts T-2.7 - Biological Resources – Assessment of Impacts T-2.10 - Biological Resources – Assessment of Impacts
Navajo Nation	T-3	9/30/10			T-3.1 - Cultural Resources – Gov't to Gov't Consultation T-3.2 - Cultural Resources – Gov't to Gov't Consultation
Colorado River Energy Distributors Association	U-1	9/7/10	U-1.1 - Western's Actions U-1.2 - Western's Actions U-1.3 - Western's Actions		
Salt River Project	U-2	9/7/10	U-2.1 - Western's Actions U-2.2 - Western's Actions U-2.3 - Western's Actions		
Irrigation & Electrical Districts Association of Arizona	U-3	9/7/10	U-3.1 - Western's Actions U-3.2 - Western's Actions U-3.3 - Western's Actions U-3.4 - Western's Actions		
TOTALS			25	47	54

10.2 COMMENT RESPONSE TABLES

Western identified and bracketed 126 substantive comments. Each comment was given a unique identifier consisting of a letter (describing the type of entity) and a sequential number. Western organized the comments into three broad areas of interest and developed comment response tables:

- Table 10.2-1 Project Description
- Table 10.2-2 Resource Protection Measures (RPMs)
- Table 10.2-3 Resource Analysis

TABLE 10.2-1
COMMENT RESPONSES – PROPOSED PROJECT

Comment No.	Comment	Revisions at	Response
PROJECT DESCRIPTION			
F-4.1	The commenter recommends more detailed information on the proposed wind park including layout and design, so that environmental impacts may be more fully evaluated. The commenter recommends that, if the information is not available, publication of the Final EIS should be delayed or additional alternatives that encompass the full range of potential layouts, sizes, and numbers of wind turbine generators should be evaluated.	Figure 2.2-3 Table 2.2-4	Environmental impacts were fully evaluated based on a maximum disturbance estimate or maximum level of impact for the EIS. In response to comments received on the EIS, Foresight has provided a preliminary layout plan for the wind park that is described in detail in the Final EIS (Figure 2.2-3). For the environmental impacts analysis, resource specialists analyzed the range of potential impacts per resource for the up-to-500 MW wind park study area, which encompasses approximately 100,000 acres. The anticipated land disturbance and other impacts were addressed in the Draft EIS and are included in the Final EIS, based on the disturbance estimates in Table 2.2-4. The preliminary layout plan was designed to minimize and/or avoid impacts to resources including biological, cultural and Waters of U.S. As a result, additional sensitive resources have been identified in the wind park study area and additional efforts were made to minimize or avoid impacts. The preliminary layout plan reflects consultation with Federal and State agencies for biological and cultural resources, and potential Waters of U.S. Additional biological resource studies are being completed prior to final infrastructure micro-siting, in consultation with United States Fish and Wildlife Services (USFWS) and the AGFD. The studies would further inform efforts to avoid and minimize avian and bat impacts from the wind project. Similarly, additional pre-construction cultural resource surveys would be completed to avoid or minimize impacts to sensitive resources. The wind park study area encompasses almost 100,000 acres of private and State trust lands and substantially exceeds lands anticipated to be disturbed for the various wind park facilities. The anticipated land disturbance and other impacts are addressed in the Final EIS for the 500 MW project, with breakouts for many impacts for the up-to-250 MW phases. For example, if fully built out to 500 MW, construction is expected to temporarily disturb 2,050 to 2,193 acres and permanently disturb 555 to 570 acres of land. The large study area allows for micro-siting at the
S-2.6	The commenter requests additional description of project timeline and phasing and suggests it is not clear how concurrent construction of facility components described in the Draft EIS will be applied to Sites A, B, and C, or the exact extent of construction for phases 1 and 2. The commenter further requests additional discussion of the expected construction activities for the 250 megawatts (MW) versus the 500 MW build-out scenarios. The commenter recommends clarification of the project timeline to allow for two full years of data collection for all three study areas before construction in any study area begins.		
T-2.9	The commenter considers the Draft EIS to be too general given the proposed project is phased, and the proposed project area is oversized.		

TABLE 10.2-1
COMMENT RESPONSES – PROPOSED PROJECT

Comment No.	Comment	Revisions at	Response
			final construction design level so that facilities can be located to avoid resources and minimize impacts if feasible. The final project area, including the exact location of wind park facilities, would be determined during final project design for each construction phase. The preliminary layout plan incorporated in the Final EIS indicates the location of the initial and subsequent phases. The initial phase of construction would include the transmission tie-line, interconnection switchyard, step-up substation, operations and maintenance facility, primary site access road, service roads, and collector lines in addition to the wind turbines to provide the contracted energy. Subsequent phases would construct additional wind turbines, service roads, and collector and transmission lines. The discussion of construction activities in the Final EIS was revised in response to comments received to better indicate the phased nature of construction. Each phase would not exceed 250 MW; at full build-out the wind park would not exceed 500 MW. The size in MW of each phase would be determined by a power sale contract. The number and model of wind turbine generators (WTGs) are typically determined by the MW contracted in the power sale contracts as well as wind resource, turbine availability, and cost. As of the Final EIS, the project had not received a power purchase contract, thus the project construction timeline could not be provided. However, construction of the initial wind project phase is expected to require 12–18 months. As an example, if the two Federal agencies issued records of decision by the end of 2011, and Foresight acquired a power purchase contract, then construction could begin in late 2012.
ALTERNATIVES			
F-4.2	The commenter recommends that the alternatives analysis in the Final EIS be expanded to include either alternate site locations to the proposed wind park or on-site alternatives that demonstrate a reduction of impacts.	Section 2.6 Section 2.2	Western has noted the commenter's support for the No Action Alternative and this comment will be taken into account in Western's decision on whether or not to grant Foresight's interconnection request. Based on the commenter's recommendation to develop an additional alternative for the development of the proposed wind park, Western has revisited its alternatives analysis. Based on the comment, Western has updated the EIS in Section 2.6, Alternatives Considered but Eliminated. Regarding the project's proposed general location, as described in Section 2.2, wind energy is supported for additional economic development for ranchlands and working landscapes in the Diablo Canyon rural planning area (RPA). This local guidance
T-2.5	The commenter supports the No Action Alternative and recommends Western and the Forest Service develop an alternative that defines the project area as study area A and eliminates study areas B and C from further consideration.		

TABLE 10.2-1
COMMENT RESPONSES – PROPOSED PROJECT

Comment No.	Comment	Revisions at	Response
T-2.8	The Draft EIS has no alternatives other than the Proposed Alternative and alternative transmission lines, and is therefore inadequate pursuant to National Environmental Policy Act (NEPA).		was adopted by the Coconino County Board of Supervisors as an amendment to the Coconino County Comprehensive Plan in August 2005 (online at http://coconino.az.gov/comdev). This location was evaluated by Foresight for wind resource analysis, proximity to transmission, and ability to secure real property rights on contiguous lands suitable for wind energy generation. Regarding the consideration of on-site alternatives, resource specialists analyzed the range of potential impacts per resource for the up-to-500 MW study area and the preliminary layout plan was prepared to minimize and/or avoid impacts to resources. As a result, sensitive resources have been avoided in multiple areas within the wind project study area. The nature and location of many of these resources are not disclosed due to biological or cultural sensitivities. Regarding agency actions, Western and the Forest Service have re-examined the alternatives to their proposed Federal actions and believe that the EIS adequately supports the Federal decisions which need to be made in response to the proposed Grapevine Canyon Wind Project. Foresight has used the results of the EIS process to reduce or avoid the wind park's on-site impacts to the extent practicable.
PROJECT FEASIBILITY			
C-2.10	The commenter asks: *Does the wind park actually produce sufficient electrical energy to offset the building of components, construction of the wind park, and completion of all the legal requirements?*		Yes. All development, manufacturing and construction elements are factored into the power purchase pricing. The output of the wind park over its life would produce significantly more energy than would be required to build it.
WESTERN'S ACTIONS			
U-1.1	Has Western determined that the underlying transmission system has sufficient transmission capacity to accommodate the power flows from this project with no [impacts to] reliability, transfer capability, or contract rights of existing uses?	Section 2.1.1	The Interconnection Feasibility Study, Interconnection System Impact Study, and Interconnection Facility Study demonstrate that as modified, reliability and service on Western's transmission system will not be adversely affected by the interconnection. As explained in the EIS and in response U-3.2, the interconnection process and transmission service process are two separate and distinct processes within Western's OATT. Foresight has no current transmission service request pending with Western. Upon receipt of such a request, Western will conduct additional studies to ensure that system reliability meets all required North American Electric Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) standards; transfer capability is within allowed and acceptable limits; and all customers (existing and future) with firm transmission service rights are treated on a comparable/equitable basis, as provided for in Western's OATT.

TABLE 10.2-1
COMMENT RESPONSES – PROPOSED PROJECT

Comment No.	Comment	Revisions at	Response
U-1.2	Have transmission and system studies been completed, and if so, what are the findings? Are there system upgrades or additional facilities necessary to accommodate the project?	Section 2.1.1	Western has completed the evaluation of Foresight's large generator interconnection (LGIP) request. The LGIP Facilities Study Report was provided to Foresight on March 24, 2010, and included a Good Faith Cost Estimate of $19,830,000 for Western to design and construct the substation facilities necessary to connect Foresigh's LGIP facility to Western's transmission lines.
U-1.3	The Socioeconomic portion of Table 1.4-1 incorporates, by reference, comments made by Colorado River Energy Distribution Association (CREDA) during scoping and refers to sections 2.7, 3.7, and 3.9. However, those subsequent sections do not specifically address the submitted comments.		Sections 2.7, 3.7 and 3.9 do properly speak to the socioeconomic impacts of Foresight's facilities in the EIS. They do not address the specific transmission service related questions raised by these comments since that is beyond the scope of this EIS. As for the operational concerns raised in the comments, when Western conducted the Interconnection Feasibility Study and System Impact Study, system conditions were modeled and it was determined that system reliability would not be detrimentally impacted. Further, Western has no plans for integrating the intermittent resource from Foresight's LGIP facility into the Western Area Lower Colorado Balancing Authority (Balancing Authority), and Foresigh has indicated that it has no interest in integrating this resource into the Balancing Authority.
U-2.3	The commenter notes that Chapter 1 claims that responses to previously submitted socioeconomic comments are provided in Sections 2.7., 3.7, and 3.9. However, none of the commenter's previously submitted comments [8/7/09] are addressed.		
U-2.1	According to Western's OASIS site, no firm long-term transmission rights are available on the Glen Canyon–Pinnacle Peak path in the southbound direction, and adequate northbound rights for the proposed full build-out of the project to 500 MW will not be available until 2019. The commenter believes that the EIS does not explain how Western would be able to support project objectives.		The availability or absence of long-term firm transmission rights posted on Western's OASIS site does not mean that potential customers cannot make requests for transmission service that may not appear to be available. When Foresigh submits a transmission service request to Western, it will be processed in accordance with Western's OATT.
U-2.2	Given the limited number of parties subject to renewable energy standards that could take delivery from the project at Glen Canyon, and given the lack of transmission rights available to support delivery to Pinnacle Peak, the EIS does not explain how Foresight's stated objectives could be met.		In the event that facilities need to be constructed to satisfy a request for Firm Point-To-Point Transmission Service from Foresight's LGIP facility, and Foresigh is willing to pay to construct these facilities, Foresigh can obtain delivery rights to Pinnacle Peak. Otherwise, while the Colorado River Storage Project transmission system footprint basically ends at Pinnacle Peak, the transmission system footprint of the Balancing Authority extends on several transmission systems throughout Arizona and on to Nevada and southern California, allowing customers access to sell power to most utilities throughout the southwestern U.S.
U-3.1	Western proposes to modify its transmission system with the addition of the switchyard and the interconnection to the Glen Canyon–Pinnacle Peak lines based on the completion of three studies		In conducting the Interconnection Feasibility Study and the Interconnection System Impact Study, Western conducted power flow studies, stability studies and short circuit studies to analyze various combinations of system conditions. All of these studies are well recognized and are "standard" studies conducted within the utility

TABLE 10.2-1
COMMENT RESPONSES – PROPOSED PROJECT

Comment No.	Comment	Revisions at	Response
	[Interconnection Feasibility Study, Interconnection System Impact Study, and an Interconnection Facilities Study]. It asserts that there is no description of, analysis of, or cumulative analysis of any impacts to existing customers or to system reliability based on the studies. Discussion of system reliability and customer impacts should also be assessed in the analysis of irreversible and irretrievable commitments of resources because the project would be in place for at least 25 years. The commenter also notes that the studies mentioned are not listed in the references section.		industry for analyzing the impacts of interconnections to existing systems. None of the conducted studies indicated any type of detrimental impact to Western's ability to make delivery to existing customers or honor its contractual obligations to existing customers. In addition, none of the studies indicated any detrimental impact to Western's meeting its reliability standards or adhering to NERC/WECC Guidelines/Standards. There was no evidence of irreversible or irretrievable commitments of resources.
U-3.2	The Draft EIS takes a piecemeal approach to environmental analysis because: *Details, requirements, and environmental impacts for any other system improvements are unknown at this time, since they would be dictated by the on-going transmission service studies... [that] may identify additional upgrades needed to accommodate the transmission service needs.* The commenter asserts that the analysis of environmental impact under NEPA should fully address both the approval of interconnection and the granting of transmission service.		The interconnection process and transmission service process are two separate and distinct processes within Western's OATT. Any facilities that are required in order to effectuate the interconnection of Foresigh's generating facility to Western's transmission system are part of the "interconnection process". In this instance, there are no additional transmission facilities that are required in order to interconnect Foresight's generating facility to Western's transmission facilities – only new substation facilities are required. Had transmission system modifications or additions been required as part of the interconnection process, the NEPA process would have included these facilities. In the event that transmission system modifications/additions are required in order to meet a subsequent request for Firm Transmission Service from Foresight's generating facility, a separate NEPA process will be initiated and conducted for these facilities.
U-3.3	The Draft EIS states that: *If any needed transmission system modifications are identified after the completion of the EIS, Western and the Forest Service would address the environmental impacts of these modifications in accordance with regulatory requirements.* The EIS goes on to state that: *The transmission lines have capacity available to transmit additional electricity...*The commenter points out that the statement does not say how much or in which direction or whether the existing capacity can carry the generation contemplated by the proposed project.	Section 2.2	The EIS should not have included the statement: *the transmission lines have capacity available to transmit additional electricity*. The EIS should have indicated that the availability of transmission capacity can only be determined by observing Western's OASIS site. Corrections to the Final EIS have been incorporated into Section 2.2 per this comment.
U-3.4	Western must analyze the effects of providing transmission service to the proposed project because the project purposes cannot be accomplished without such	Section 2.1.1	Western's OATT includes processes for both interconnecting generating projects to Western's transmission system as well as for making a transmission service request to use Western's transmission system for making power deliveries. Both processes

TABLE 10.2-1
COMMENT RESPONSES – PROPOSED PROJECT

Comment No.	Comment	Revisions at	Response
	transmission service. The effects may be direct, indirect, or reasonably foreseeable future effects. Western has no choice but to complete the transmission-related studies, analyze the environmental impacts, including socioeconomic impacts to existing contractors, and report them. Western may need to republish a Draft EIS if the impacts are significant.		are separate and distinct, with different steps, timelines, monetary deposits, etc. A request for interconnecting a generating facility does not require that a simultaneous request be made for transmission service, nor does a request for transmission service imply that a corresponding request for an interconnection must be made. While it is obvious in this situation that the generation from this project cannot get to any market without using Western's Colorado River Storage Project (CRSP) transmission system, there is nothing in Western's OATT that compels Foresight to make a transmission service request simultaneously with its request for interconnection. While the interconnection process includes a NEPA process, the transmission service request process for a new generation resource may or may not require a NEPA process. Section 2.1.1 of the Final EIS has been updated to provide this clarification.
SITE ACCESS			
C-1.1	The commenter understands closing the area for construction–for the safety issue, of course–but has difficulty with the operation phase of the project. The commenter asserts that the public was told at the public scoping meeting that it would have access to the entire project after the completion of the construction. The commenter would like clarification on that.		Foresight would consult with the Forest Service, ASLD, private landowners and the County regarding public safety and access during construction phases. A newly constructed access road would provide access to private and State trust lands for which the ASLD anticipates issuing a non-exclusive right-of-way for the project, grazing lessees, and private landowners. Access to certain portions of the wind project would be restricted for public safety and project security; for example, the step-up substation and operations/maintenance facility. In addition, Western's interconnection switchyard, located on Forest Service-managed lands, would be restricted from public access. Following construction, it is expected that public use, including recreation and hunting, would generally continue as it has historically, subject to state law and potential private land limitations that are not associated with the wind park.
C-2.1	The commenter is concerned about controlling access because locked gates on private parcels may preclude entrance into public lands.		
C-2.2	The commenter asks, who would monitor access to the wind park [during construction to avoid unauthorized public access] and how?		Foresight, through its prime construction contractor, would monitor access to the wind park construction area. This is typically done via a staffed sign-in station.

TABLE 10.2-1
COMMENT RESPONSES – PROPOSED PROJECT

Comment No.	Comment	Revisions at	Response
S-2.26	The commenter requests Foresight discuss any limitation on access to state and private lands with AGFD as access into these lands are crucial in meeting hunting objectives, especially for elk and pronghorn.	Table 2.7-1	Foresight consulted with AGFD regarding hunting access. Once the construction timeline and project area per phase are identified, Foresight would prepare a Hunter Education and Access Plan in coordination with AGFD. It is anticipated that this plan would include a public notice regarding construction activities and timeline, written notice to pronghorn and elk hunting permittees for Unit B, and a sign-in kiosk at public access points to the construction project. In addition, the Forest Service anticipates erecting a three-panel kiosk at the intersection of FR125 and Lake Mary Road that it would use to place information about construction or public access, especially as it would apply to construction of Western's proposed switchyard and the proposed transmission tie-line on Forest Service-managed lands. Generally, public use, including recreation and hunting, would continue as it has historically, subject to state law and potential private land limitations that are not associated with the wind park.
POST-CONSTRUCTION RESTORATION			
C-2.6	The commenter asks: *What entity will oversee post-construction reclamation? Will the public have input? What consequences will there be to the permittee for non-compliance?*	Table 2.7-1	The Forest Service right-of-way for the transmission line and switchyard would be managed under a special use permit with terms and conditions that are included in the Forest Service's decision of this EIS. If the terms/conditions of the special use permit are not met, then the Forest Service can issue a non-compliance notice. Based on the levity of the non-compliance situation and response (or lack of response), the Forest Service could revoke a special use permit for non-compliance. In situations where resource damage may be a result of a non-compliance with the permit terms and conditions, the Forest Service can address the situation and bill the special use permittee. The private landowner also has post-construction reclamation provisions in the land lease agreement with Foresight that would be implemented per the executed lease agreement per project phase.
DECOMMISSIONING			
C-1.2	The commenter remembers hearing at the public scoping meeting that there would be a decommission bond that would be required before any construction could be started on the project. The commenter stated that the EIS specifically indicates that that wasn't even addressed. The commenter would like clarification on that as well.	Section 2.2.1.5 Section 2.2.2.5	Decommissioning provisions are a typical term in land rights agreements, and are expected to be included in the required jurisdictional permits from the Forest Service (FS special use permit), Arizona State Land Department (ASLD right-of-way easement), and Coconino County (conditional use permit). Decommissioning provisions include stipulations for post-construction and non-compliance. For example, the Forest Service special use permit has standard language for removal of improvements that states, *"Prior to abandonment of the improvements or within a*

TABLE 10.2-1
COMMENT RESPONSES – PROPOSED PROJECT

Comment No.	Comment	Revisions at	Response
C-2.8	The EIS suggests that, if the project is decommissioned, the facilities may be removed and areas of disturbance may be reclaimed. The commenter is concerned with the understanding of the word may [emphasis original].		*reasonable time following revocation or termination of this authorization, the holder shall prepare, for approval by the authorized officer, an abandonment plan for the permit area. The abandonment plan shall address removal of improvements and restoration of the permit area and prescribed time frames for these actions. If the* (permit) *holder fails to remove the improvements or restore the site within the prescribed time period, they become the property of the United States and may be sold, destroyed or otherwise disposed of without any liability to the United States. However, the holder shall remain liable for all costs associated with their removal, including costs of sale and impoundment, cleanup, and restoration of the site."* On trust lands administered by ASLD, a standard provision of the right-of-way agreement for a wind energy generation facility requires the grantee to, *"Remove from the Subject Land all above-ground Windpower Facilities, equipment, and any other personal property of Grantee, all in a commercially reasonable manner that minimizes injury to the Subject Land; Reclaim and surrender the Subject Land in a condition at least as good as the condition in existence on the Commencement Date (subject to ordinary wear and tear and damage by fire or other casualty); Restore all Subject Land disturbed by Grantee, or any permitted sub-Grantee or assignee, to a condition and forage density reasonably similar to its original condition and forage density;* and *Complete, as reasonably required, all leveling, terracing, mulching and other reasonably necessary steps to prevent soil erosion, to ensure the establishment of suitable grasses and forbs, and to control noxious weeds and pests, in areas of the Subject Land that were disturbed by Grantee*." Further, "*If Grantee fails to remove from the Subject Land any of the Windpower Facilities, or any of Grantee's equipment or other personal property as required, then Grantor may remove the Windpower Facilities or any of Grantee's Personal Property and restore the Subject Land. Grantee shall reimburse Grantor for all reasonable costs of removal and restoration actually incurred by Grantor*." Foresight also has decommissioning and post-construction reclamation provisions in the land lease agreement with the private landowner that would be implemented per the executed lease per project phase.
F-4.25	The commenter recommends that the Final EIS identify bonding or financial assurance strategies for decommissioning and reclamation of the project site using a 25-year life span.		

TABLE 10.2-2
COMMENT RESPONSES – RESOURCE PROTECTION MEASURES

Comment No.	Comment	Revisions at	Response
SCOPE OF RESOURCE PROTECTION MEASURES			
O-2.1	While the Draft EIS proposes some limited mitigation and RPMs for the project, they are limited to the proposed switchyard and tie-line. We believe this scope is too narrow as the project is clearly dependent on utilizing the public's lands and the public's transmission lines. The impacts of the overall project should be considered and mitigation included.	Table 2.7-1	The commenter maintains that the RPMs that were provided in the Draft EIS were only for the transmission tie-line and switchyard. However, RPMs for the up-to-500 MW wind park and associated impacts were described in the Draft EIS. Table 2.7-1 includes RPMs for all elements of the project based on the NEPA requirement to evaluate and disclose the potential environmental impacts of all elements of a project regardless of land jurisdiction.
O-2.18	The commenter encourages a broader consideration of the overall impacts of this project due to the fact that the public lands and transmission system are integral components of it moving forward. Consideration of minimizing the impacts on the state and private lands and any mitigation should be included.	Section 2.6	While NEPA does not mandate agencies to mitigate adverse environmental impacts, the Council on Environmental Quality (CEQ) NEPA regulations at 40 CFR 1500.2(f) authorize agencies to use all practicable means, consistent with the requirements of the Act and other essential considerations of national policy, to restore and enhance the quality of human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment. In accordance with the CEQ NEPA regulations, mitigation includes minimizing impacts by limiting the degree or magnitude of the action and its implementation and by reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action (40 CFR Section 1508.20). These types of mitigation would avoid or reduce adverse impacts to wildlife and are consistent with the project's approach to mitigation. First, Foresight has designed and located the wind park facilities in a remote location in a manner that avoids and minimizes impacts. For the Final EIS, Foresight provided a preliminary layout plan that avoids or minimizes impacts of the wind park to biological, cultural, potential waters of the U.S., and other sensitive resources. For example, on Federal land, much of Foresight's tie-line route overlaps, or is adjacent to, already-disturbed lands. Also, Western's interconnection switchyard was located to avoid or minimize impacts to biological and visual resources. The primary access road was designed to minimize land disturbance. Additionally, Foresight committed to RPMs to reduce adverse project effects from the proposed wind park and transmission tie-line. Western and the Forest Service have committed to RPMs for the proposed switchyard and the transmission tie-line located on Forest Service-managed lands. Western and the Forest Service have addressed the potential impacts of all elements of the proposed project regardless of land jurisdiction.
GROUND DISTURBANCE			
F-4.10	The commenter recommends that ground disturbance be minimized in ephemeral washes to reduce impacts.	Section 3.6.2.2	Consistent with the comment, ground disturbance would be minimized in ephemeral washes and waters under Federal jurisdiction to reduce impacts. Where crossings are

TABLE 10.2-2
COMMENT RESPONSES – RESOURCE PROTECTION MEASURES

Comment No.	Comment	Revisions at	Response
	Potential damage that could result from the disturbance of flat-bottomed washes includes adequate capacity for flood control, energy dissipation, sediment movement, and high-value habitat for desert species.		constructed, culverts and low water crossings would be utilized to maintain the flow conditions to the downstream reaches. Energy dissipation treatments would be constructed where erosive conditions may exist as indicated by discharge resulting from storms up to and including the 100-year storm event. A narrative was added to the Final EIS (see Section 3.6.2.2) that describes a three-tiered approach to minimizing impacts consistent with Environmental Protection Agency (EPA) and United States Army Corps of Engineers (USACE) wetland regulations. The tiered approach uses: 1) avoidance as the primary mechanism to limit impacts to jurisdictional waters, and where feasible other water features; 2) configuration of development to minimize the quantity of jurisdictional waters and other water features impacted where avoidance cannot be achieved; and 3) engineering controls to further limit impacts where practicable.
REVEGETATION			
O-2.17	The commenter appreciates that the Draft EIS outlines the need to minimize soil disturbance and limit opportunities for the spread of invasive plant species. It strongly supports measures to revegetate with native endemic species and encourages consideration of these measures in all areas of the project.	Table 2.7-1 Section 3.2.2.2	As stated in the Draft EIS, Foresight would, *"use BMPs described in Forest Service Handbook (FSH) 2509.22 during construction and operation, including revegetating disturbed areas with native grasses and forbs."* These practices would apply to the proposed transmission tie-line on Forest Service lands. Foresight would also adhere to Best Management Practices (BMPs) for the proposed transmission tie-line that are expected to be reflected in the Forest Service's Special Use Permit, which may include BMPs for managing infestations as specified in *Treatment of Noxious or Invasive Weeds on the Coconino, Kaibab, and Prescott National Forests within Coconino, Gila, Mojave, and Yavapai Counties, Arizona* (see Appendix C in the EIS). The wind park and transmission tie line located on ASLD lands would be in compliance with items pertinent to soils and invasive plant species in its right-of-way easement with the ASLD. Western would ensure that all construction vehicles and equipment for the construction of the switchyard would be sprayed before initial ingress onto National Forest Service lands. A high pressure hose would be used to clear the undercarriage, tire treads, grill, radiator, and beds of any mud, dire, and plant parts that may potentially spread the seeds of noxious plants. If revegetation is required by the Forest Service in its Special Use Permit issued for the switchyard, Western would use seed mixtures as recommended by the Forest Service.
S-2.23	AGFD requests that disturbed sites be monitored for multiple years to ensure that cheat grass (*bromus tectorum*) does not become established. In the event it does, annual-specific herbicides should be used to eliminate its occurrence.		
S-2.24	The commenter recommends Monsen et.al. 2004, *Restoring Western Ranges and Wildlands*, for seeding techniques and species assemblages to revegetate disturbed areas.		

TABLE 10.2-2
COMMENT RESPONSES – RESOURCE PROTECTION MEASURES

Comment No.	Comment	Revisions at	Response
TRENCH WORK			
F-2.1	The commenter supports project efforts to put the majority of power lines underground because it will reduce impacts to raptors. It recommends following trenching guidelines per AGFD. These include following existing disturbed areas; compacting soil in low areas at drainage crossings to reduce erosion; minimizing the amount of open trenches at any given time by working trenching and back-filling crews close together; trenching during the cooler months of October–March; avoiding leaving trenches open overnight; and where trenches cannot be back-filled, immediately, constructing escape ramps at least every 45 meters to AGFD specifications (many specifications, therefore not listed here).	Table 2.7-1	The commenter's support for underground power line installation is noted. The collection system between wind turbines and to the step-up substation would be underground where feasible. The 345-kV transmission tie-line would not be located underground; facilities of this nature are located above ground. RPMs were included in the Draft EIS to reduce impacts to raptors, and additional measures and refinements to the measures are included in the Final EIS. These measures include following guidance of the Avian Power Line Interaction Committee (APLIC) Suggested Practices for Avian Protection on Power Lines (2006) to minimize and mitigate risk of potential avian electrocutions along the proposed tie-line and any other overhead transmission lines associated with the wind park. To minimize collision risk, recommendations of the APLIC 1994 document *Mitigating Bird Collisions with Power Lines* have been incorporated. Regarding the recommended trenching guidelines, Foresight would endeavor to conduct trenching, cabling, and trench filling concurrently. Where site conditions allow, Foresight would utilize a rockwheel trencher which simultaneously cuts open the trench, installs the cable and closes the trench. Based on this construction method, it is expected that the majority of trenching would be back-filled on the same day, as recommended in the comment
S-2.25	The commenter recommends several standards be used for trench work. Trenches should be covered or back-filled as soon as possible and should always be covered overnight. Activities should be concentrated so that the area affected by digging or back-filling at any one time is as small as possible. Pits and trenches should be monitored often during and after construction. Incorporate escape ramps in ditches or fencing along the perimeter to deter small mammals and herpetofauna (snakes, lizards, etc.) from entering ditches. Escape ramps should be constructed at least every 90 meters. These can be short lateral trenches sloping to the surface at less than 45 degrees, or wooden planks extending to the surface.		
MINIMIZING WILDLIFE IMPACTS			
C-2.3	The commenter asks: *How does mitigation avoid adverse impacts to wildlife?*	Table 2.7-1	In accordance with the CEQ NEPA regulations, mitigation includes minimizing impacts by limiting the degree or magnitude of the action and its implementation and by reducing or eliminating the impact over time by preservation and maintenance

TABLE 10.2-2
COMMENT RESPONSES – RESOURCE PROTECTION MEASURES

Comment No.	Comment	Revisions at	Response
O-2.14	Because the potential impacts to wildlife are so significant, the commenter asks that AGFD's *Guidelines for Reducing Impacts to Wildlife from Wind Energy Development in Arizona* be utilized for ensuring wildlife-friendly alternatives and be considered as part of the Final EIS.		operations during the life of the action (40 CFR Section 1508.20). These types of mitigation would avoid or reduce adverse impacts to wildlife. Western, the Forest Service, and Foresight have prepared a preliminary layout plan to avoid and minimize impacts to wildlife to the extent possible for the proposed switchyard, wind park, and transmission tie-line. For unavoidable impacts, Foresight has committed to implement mitigation measures (also called RPMs in the EIS) which are intended to help offset projected impacts to wildlife. AGFD lists 10 practices that avoid or minimize impacts to wildlife in its *Guidelines to Reducing Impacts to Wildlife from Wind Energy Development projects in Arizona*. These measures are designed to avoid or minimize adverse impacts. The RPMs in Table 2.7-1 incorporate these practices, to the extent feasible or applicable to the project and were updated for the Final EIS. Foresight will continue to work closely with AGFD during the development and implementation of an Avian and Bat Protection Plan (ABPP). RPMs in the Final EIS (and included in the ABPP) would ensure that impacts to threatened, endangered, or sensitive wildlife species from project construction or operation are reduced or avoided to the extent feasible. A post-construction monitoring plan would be implemented to monitor project effects on wildlife and to help inform Foresight to adapt its operations in consultation with the USFWS and AGFD if project impacts prove to be greater than anticipated. The duration of post-construction monitoring will be addressed in the ABPP. Currently, two years of post-construction monitoring are planned.
MORTALITY MITIGATION			
C-2.5	The commenter asks: *"How is the mortality of any protected species of bird or raptor mitigated?"*	Table 2.7-1 Section 3.2.2.2	Foresight is voluntarily developing an ABPP in consultation with the USFWS and AFGD, which will provide for consultation during ABPP implementation and project operation. Post-construction mortality monitoring would be conducted to evaluate effects to bird species and populations and determine if any changes to the operational practices should be considered. The adaptive management component of the ABPP will include a toolbox of operational practices and/or compensatory measures; individual practices would be implemented as needed if post-construction monitoring demonstrates that impacts are greater than anticipated. Post-construction results would be used to inform adaptive management measures implemented for the initial phase and siting decisions in subsequent phases.

TABLE 10.2-2
COMMENT RESPONSES – RESOURCE PROTECTION MEASURES

Comment No.	Comment	Revisions at	Response
MIGRATORY BIRD PROTECTION			
F-2.5	The commenter states that the Migratory Bird Treaty Act (MBTA) prohibits the taking of migratory birds, except as permitted by regulations. The Office of Law Enforcement focuses its resources on investigating and prosecuting individuals and companies that take migratory birds without identifying and implementing all reasonable, prudent, and effective measures to avoid that take. Companies are encouraged to work closely with the USFWS to identify available protective measures when developing project plans and/or avian protection plans and to implement those measures prior to or during construction.	Table 2.7-1 Section 3.2.2.2	The comment is noted and the RPMs in the Draft EIS include reference to the MBTA. In response to these comments, additional information on the impacts to migratory bird species was updated in the Final EIS (see Section 3.2.2.2). Foresight has worked closely with the USFWS and AGFD to develop RPMs for birds. Foresight is voluntarily developing an ABPP in consultation with the USFWS and AGFD. The ABPP will include operational practices to further minimize impacts to birds and bats. Pre-construction studies have been conducted and additional studies are being completed prior to final micro-siting of wind park elements to help inform any further avoidance and minimization to be reflected in final micro-siting. Post-construction studies would be conducted to monitor bird and bat fatality rates resulting from operation of the wind park. Post-construction results would be used to inform adaptive management measures implemented for the initial phase and siting decisions in subsequent phases. The adaptive management component of the ABPP will include a toolbox of operational practices and/or compensatory measures; individual practices would be implemented as needed if post-construction monitoring demonstrates that impacts are greater than anticipated.
F-4.18	The commenter recommends that Foresight work closely with USFWS in developing its ABPP and include a copy of the plan in the Final EIS.	Table 2.7-1 Section 3.2.2.2	Foresight has been working closely with the USFWS on the ABPP subsequent to this comment. The ABPP will include operational practices to further minimize impacts to birds and bats. Pre-construction studies have been conducted, and additional studies are being completed prior to final micro-siting of wind park elements to help inform implementation of the avoidance and minimization measures included in the ABPP. The Final EIS includes an update of any new avoidance and minimization measures (see Table 2.7-1). Post-construction monitoring would be conducted to monitor bird and bat fatality rates resulting from operation of the wind park. Post-construction results would be used to inform adaptive management measures implemented for the initial phase and micro-siting decisions in subsequent phases. An adaptive management plan will be included in the ABPP.
F-4.19	The commenter recommends Foresight adopt a formal Adaptive Management Plan to ensure the success of mitigation measures (to avoid the take of eagles for instance) and to provide flexibility to incorporate new information. The commenter further recommends that the agencies and Foresight review the discussion on Adaptive Management in the NEPA Task Force Report to the CEQ, *Modernizing NEPA*.		

TABLE 10.2-2
COMMENT RESPONSES – RESOURCE PROTECTION MEASURES

Comment No.	Comment	Revisions at	Response
GOLDEN EAGLE			
F-2.8	The commenter asserts that golden eagle (*aquila chrysaetos*) is a trust species missing from the Draft EIS that should be addressed more fully rather than left to discussion in the appendices. It is protected by the Bald and Golden Eagle Protection Act (BGEPA). It recommends that an additional year of pre-construction raptor surveys be conducted in order to better evaluate the risk to golden eagles from the project. The commenter observes that the status of breeding golden eagles in the Southwest and other western states is uncertain but many experts believe the species is declining. Two "inactive" golden eagle nests were found during surveys in the spring of 2008. The commenter maintains that nesting by golden eagles tends to be cyclic, and during some years breeding pairs may occupy territories but not lay eggs. Even though the pre-construction survey data suggests that avian mortality overall would be average compared to other facilities, the conclusion does not take into account the species-specific probability of mortality which is very high for golden eagles. The commenter states that placement of turbines within four miles of prairie dog towns should be avoided until additional surveys can be conducted.	Table 1.3-1 Table 2.7-1 Section 3.2.1.2 Section 3.2.2.2	The Final EIS has been updated regarding the golden eagle—refer to revised Sections 3.2.1.2 and 3.2.2.2. Additional surveys and evaluation for golden eagles are underway in consultation with USFWS. Spring nest surveys were conducted in 2011 within ten miles of all project components per the Draft USFWS Guidance (2011). Foresight has considered the final Federal Advisory Committee recommendations (April 2010) and AGFD's Guidelines (2009) and is working in consultation with USFWS in regard to recent Federal draft guidance for eagles. Foresight is currently working with USFWS to develop implementation level details for RPMs and advanced conservation practices for eagles, and an ABPP is being developed in consultation with USFWS and AGFD. Advanced conservation measures or practices may be developed to provide further implementation details. Impacts would be monitored through post-construction studies that assess fatality rates resulting from operation of the wind park using carcass searches and bias trials to produce seasonal and annual fatality estimates, use studies, and nest monitoring. An adaptive management protocol will be included in the ABPP so that, if mortality is greater than expected, wind park operations may be modified, and future phases can be designed and constructed to further minimize impacts or to provide compensatory mitigation. Surveys to document other important wildlife, such as prairie dogs, were undertaken within sub-study area A and throughout the wind park study area. The methodology for these surveys has been discussed with the AGFD and USFWS. Two years of pre-construction avian use surveys will be completed prior to construction of the initial phase as well as subsequent build-out phase(s) for the respective phase areas. Data from these studies will be used to inform final project micro-siting per phase to reduce and avoid impacts. The preliminary layout plan included in the Final EIS reflects placement of turbines to avoid prairie dog colonies. Regarding the comment on overall avian mortality, please see the response under the subsection on Migratory Bird Protection.
F-4.11	The commenter recommends identifying, in the Final EIS, specific measures to reduce impacts to eagles and comply with the MBTA and the BGEPA.		
S-2.8	The commenter recommends consultation with USFWS to determine appropriate measures to address bald and golden eagles under the BGEPA, including the development of advanced conservation practices. Advanced conservation practices should address prairie dog towns, nest sites, and other factors affecting golden eagle movement and survival. The Act requires specific authorizations and RPMs not addressed in the Draft EIS.		

TABLE 10.2-2
COMMENT RESPONSES – RESOURCE PROTECTION MEASURES

Comment No.	Comment	Revisions at	Response
	Status under the Act should be acknowledged for both bald and golden eagles throughout the document and standards established in the Act should be presented.		
T-2.6	There are Hopi eagle shrines adjacent to study area A and the two-mile buffer zone. The commenter continues to be concerned about their potential mortality from 500-foot tall wind turbines and asks how many eagle, raptor, and other bird mortality can be expected as a result of this project. The Draft EIS and project specifications should be revised to reflect new guidance in April, 2010 from USFWS, *Wind Turbine Guideline Advisory Committee Recommendations,* and AGFD's new *Guidelines for Reducing Impacts to Wildlife from Wind Energy Development in Arizona*.		
F-4.13	The commenter recommends that final decision documents commit the project to additional data collection and analysis to identify areas that are important to bald and golden eagles to avoid take and ensure proper siting.	Section 3.2	Subsequent to the comment being submitted, and in consultation with the commenter, additional surveys and evaluation for golden eagles within the wind park study area have been completed as reflected in the Final EIS. Foresight is consulting with the USFWS regarding additional data collection prior to final micro-siting to help inform avoidance and minimization to eagle impacts from the wind project. Western's Record of Decision (ROD) will address additional data and analysis collection needs for the proposed switchyard in relation to minimization of eagle impacts. The Forest Service's ROD will address data collection and analysis needs for the transmission tie-line and switchyard located on Forest Service-managed lands relative to minimizing eagle impacts.
THREATENED AND ENDANGERED SPECIES			
F-4.16	The commenter encourages Western and Foresight to relocate, reduce, or eliminate portions of the project footprint that would adversely affect Threatened and Endangered Species (TES) or their potential habitat. Actions that should be considered include minimizing placement of turbines near prairie dog towns, tactical shut-down during critical hours of species activity, blade feathering/idling, reducing cut-in speeds, adjusting turbine speeds, and using radar technology to monitor for birds and bats.	Section 3.2.2.2	A BA has been prepared as part of the consultation between Western, the Forest Service, and USFWS, concurrent with the EIS. The USFWS consultation is a separate process from the EIS review and addresses any project-related effects to listed species under the ESA. Western's correspondence related to consultation with the USFWS under the ESA will be included in Appendix A if it is published before the EIS is finalized. In response to these comments, additional information on the impacts to migratory bird species was updated in the Final EIS (see Section 3.2.2.2). The commenter's referenced actions have been considered and incorporated into the design and planned operations as appropriate and feasible. The ABPP will include operational practices to further minimize impacts to birds and bats. Pre-construction

TABLE 10.2-2
COMMENT RESPONSES – RESOURCE PROTECTION MEASURES

Comment No.	Comment	Revisions at	Response
			studies have been conducted and additional studies are being completed prior to final micro-siting of wind park elements to help inform avoidance and minimization measures adopted in the ABPP. Post-construction studies would be conducted to monitor bird and bat fatality rates resulting from operation of the wind park. Post-construction results would be used to inform adaptive management measures implemented for the initial phase and siting decisions in subsequent phases. An adaptive management component will be included in the ABPP. The Preliminary Layout Plan included in the Final EIS reflects placement of turbines to avoid prairie dog colonies. Relative to the other actions referenced in the comment, in consultation with the USFWS and AGFD, the ABPP will reflect a menu or toolbox of operational practices and compensatory mitigation and will address any impacts to TES species or their potential habitat.
USE OF GUY WIRES			
F-2.2	The commenter commends the project for avoiding the use of guy wires on Meteorological Tower (MET) towers. It recommends avoiding the construction of permanent met towers. If this is unavoidable, towers should be tubular or best available technology to reduce birds perching or colliding with the towers. Lights should be red or dual red-white and strobe-like or flashing, not steady burning lights, to meet Federal Aviation Administration (FAA) requirements. Only a portion of the turbines should be lighted. Lights should flash synchronously.	Table 2.7-1	Up to 16 permanent met towers the height of the WTG hub would be installed within the wind park study area for the project built out to 500 MW (see Section 2.2.1.3). Met towers at this height are necessary to collect weather information at approximately the WTG hub height. It is typically not possible to erect tubular un-guyed met towers of this height without extensive use of guy wire supports. Guy wires are believed to be a source of avian fatalities, particularly in poor weather conditions (see Manville 2009; Winkelman 1995); thus, Foresight prefers to avoid them where feasible. Therefore, lattice framed, un-guyed met towers would be used. Specific measures to reduce perching on lattice meteorological towers are not available at this time, but typical met lattice tower frameworks have limited areas suitable for perching raptors. Foresight is reviewing currently available, reasonable, deterrent measures to reduce bird perching on met towers. Carcass searches would be considered as part of post-construction monitoring being developed through the ongoing consultation with USFWS and AGFD to develop the ABPP. Per FAA regulations (see Section 2.2.1.3) all structures associated with the project 200 feet above ground level would be lit, including the permanent met towers. Flash duration and lighting intensity would be the lowest permissible under FAA regulations that is commercially reasonable. The lighting currently recommended by the FAA for installation on tall structures at commercial wind projects, such as wind turbines and permanent met towers, have not been shown to increase collision risk to birds and bats (Kerlinger et al. 2010; Arnett et al. 2008; Tidhar et al. 2010; Longcore et al. 2008; Manville 2009; Gehring et al. 2009). For commercial wind energy projects, the FAA currently recommends using strobe or strobe-like lights
S-2.18	The commenter requests that met towers be un-guyed and free-standing (not lattice type). Where guy wires are necessary, it asks that Bird Flight Diverters (BFDs) be used. For towers that are on-site for more than one year, the commenter further recommends that carcass searches be implemented, especially during the bird migration period. All met tower locations should be provided to AGFD for use in its aircraft safety efforts.		

TABLE 10.2-2
COMMENT RESPONSES – RESOURCE PROTECTION MEASURES

Comment No.	Comment	Revisions at	Response
			synchronously that produce momentary flashes interspersed with dark periods for up to three seconds in duration (FAA 2007). Red strobe or strobe-like lights are used and this lighting has not been demonstrated in several studies to increase collision related bird and bat fatalities (see Avery et al. 1976 in addition to references listed above). Pursuant to FAA regulations all structures associated with the proposed wind park 200 feet above ground level would be lit as directed by the FAA, including the permanent met towers. Flash duration and lighting intensity would be the lowest permissible under FAA regulations that is commercially reasonable
BIG GAME			
O-1.1	The EIS states that construction may *result in short-term changes in pronghorn movement or behavior if pronghorn occur in the project area during construction.* A timing restriction on construction within summer pronghorn habitat, particularly the transmission line, should be implemented during the fawning season from April 15 through May 31 to mitigate potential impacts to pronghorn during this critical period. The rationale for this condition includes: a) tie-line, switchyard, and the wind park study areas fall within the range of the Anderson Mesa pronghorn herd that declined in recent decades as the result of habitat degradation and drought; b) the primary management issue for the Anderson Mesa herd is low fawn recruitment; c) approximately 63 percent of the transmission line corridor is grassland habitat and pronghorn likely occur in these areas particularly during the summer breeding season; and d) the Forest Service uses annual road closures on Anderson Mesa to reduce impacts to pronghorn fawning.		Given the small acreage of grassland habitat impacted by the wind park transmission tie-line and switchyard, and the fact that this habitat type is abundant throughout the region, the Anderson Mesa pronghorn population trends and habitat viability would not be impacted by construction or operation of the tie-line and switchyard. Foresight is in consultation with AGFD regarding pronghorn, and would consult with AGFD regarding construction activities for the proposed wind park and transmission tie-line. Construction may result in short-term changes in pronghorn movement or behavior if pronghorn occur in the project area during construction. The area is not within a major migratory corridor. Project location, siting, and selection of RPMs are intended to avoid or minimize impacts on wildlife, including migratory animals. Given the wind park's planning efforts and RPMs, potential impacts are judged to be short-term and not adverse.
O-2.11	The commenter requests that wind facilities be constructed in a season when animals are not migrating in areas where these facilities intersect with critical ranges or migration corridors of large mammals.		

TABLE 10.2-2
COMMENT RESPONSES – RESOURCE PROTECTION MEASURES

Comment No.	Comment	Revisions at	Response
S-2.20	AGFD recommends that the project avoid construction during March 15 and May 31, if possible, since the project is located within pronghorn fawning habitat.		
PRE-CONSTRUCTION WILDLIFE SURVEYS AND POST-CONSTRUCTION MONITORING STUDIES			
C-2.4	The commenter asks: *"What is the purpose of post-construction monitoring of wildlife?"*	Table 2.7-1	A post-construction monitoring plan for the wind park study area is being developed to support the aims and objectives of the AGFD 2009 Guidelines and the FAC 2010 Recommendations. There are several objectives of the post-construction monitoring studies for the study area: 1) to monitor the level of bird and bat mortality attributable to collisions with wind turbines on an annual basis at the site in comparison to other wind-energy facilities; 2) to provide a general understanding of the factors associated with the timing, extent, species composition, distribution, and location of the fatalities found at the site; 3) to determine if a relationship exists at the site between bat activity and bat fatalities; 4) to determine if a relationship exists at the site between bird use and bird fatalities; 5) to monitor raptor nest activity at the site; 6) to provide information to inform development of subsequent phases of the wind park; and 7) to provide scientific data to inform the Adaptive Management Plan for the initial phase.
F-2.12	The commenter strongly recommends that additional work be completed to assess the risk of avian and bat impacts. In particular, the project should be considered a Category 3 site per AGFD's guidelines because of the number of proposed turbines and project size, presence of special status species such as golden eagles, and presence of prairie dog colonies that may concentrate raptor activity. The commenter points out, that as a Category 3 site, biological inventories for Sites B and C should be completed prior to construction in Site A. In addition, at least two years of pre-construction bird and bat data should be collected prior to construction at Site A with special attention to characterizing seasonal and spatial variability in species use. A post-construction monitoring plan to assess the impacts of operation on wildlife should cover at least three years of post-construction operations.	Table 2.7-1 Section 3.2.2.2	Consistent with the comments, additional studies have been completed since the Draft EIS publication and additional studies are ongoing. Foresight would complete a total of two years of pre-construction avian and bat surveys for the initial phase area prior to construction of that phase. Foresight would complete a minimum of one year of pre-construction surveys within other portions of the wind park study area prior to construction of the initial phase. Surveys for bald and golden eagle nests were completed within a 10-mile buffer of all project components during Spring 2011. In addition, Foresight would complete a second year of pre-construction surveys for subsequent phase areas prior to construction of those phases. This would result in the completion of two years of pre-construction data in all developed portions of the wind park study area. Two years of post-construction studies would be conducted to assess bird and bat fatality rates resulting from operation of the wind park; fatality monitoring uses carcass searches and bias trials to produce seasonal and annual fatality estimates. In addition, post-construction use monitoring would be conducted concurrently for bats (using acoustic monitoring) and birds (using point-count methodologies) to replicate pre-construction surveys. Information collected during post-construction studies completed for the initial phase would inform siting and

TABLE 10.2-2
COMMENT RESPONSES – RESOURCE PROTECTION MEASURES

Comment No.	Comment	Revisions at	Response
F-2.14	The commenter recommends that the project complete post-construction bird and bat fatality monitoring for at least two years. It also recommends that all bats collected during mortality searches be offered as a donation to the American Museum of Natural History for their ongoing North American Bat Samples for Genomic and Stable Isotope Studies.		adaptive management of subsequent phases as part of the ABPP being voluntarily developed in consultation with the USFWS and AGFD. Donation of bats collected during mortality searches to the American Museum of Natural History is being considered for inclusion in the ABPP and will be discussed further with the USFWS and AGFD. Post-construction monitoring duration will be addressed in the ABPP, currently under development in coordination with the USFWS and AGFD.
F-4.14	The commenter recommends conducting additional pre-construction surveys of raptors and bats prior to siting turbines, including study areas B and C not surveyed previously. It advises enlarging the area of survey for raptors and observes that some studies cover ten miles.		
F-4.15	The commenter recommends that the project commit to post-construction monitoring studies for at least two years, as described by the USFWS Wind Turbine Guidelines Advisory Committee.		
O-2.3	Research over the past two decades has pointed to a number of siting and operational options that can greatly reduce wildlife impacts based upon where turbines are sited and when they operate. One such action is to monitor before and during construction and operation to identify and minimize bird and bat mortality. The commenter cites research to suggest that frequent surveying of footprint areas for dead birds and bats is important as they may quickly disappear due to scavengers. Monitoring should include a baseline analysis of the nocturnal migration of songbirds as well as any detected bat migration.		

TABLE 10.2-2
COMMENT RESPONSES – RESOURCE PROTECTION MEASURES

Comment No.	Comment	Revisions at	Response
S-2.2	Prior to construction, at least two years of pre-construction bird and bat data be collected with special attention to characterizing seasonal and spatial variability in species' use. Pre-construction surveys for raptor use should be continued for at least one additional year (total of two years pre-construction per project area) as golden eagle nesting tends to be cyclic and during some years breeding pairs may not lay eggs in a territory. Other raptor species utilize more than one nest site between years, making multi-year surveys important for assessing impacts.		
S-2.3	Biological inventories should be completed for Sites B and C prior to construction in Site A.		
S-2.4	A post-construction monitoring plan should be designed to assess the impacts of operation on wildlife consistent with AGFD's Wind Guidelines, Table 4.		
S-2.5	Foresight's plan for one year of post-construction monitoring is inadequate.		
S-2.19	AGFD recommends acoustical monitoring of met towers across seasons with an emphasis on bat migration periods between August 16 and October 31 in order to assess met tower impacts on bats.	Section 3.2.1.2	Acoustic monitoring of bats was conducted in 2007–2008; additional acoustic monitoring is being conducted throughout the wind park study area (see Section 3.2.1.2). Specifically, acoustical monitoring at one met tower was conducted from June 26th to November 9th, 2007 and from April 12th to July 7th, 2008, capturing the migration period between August 16th and October 31st. Additional acoustic monitoring being conducted throughout the wind park study area includes additional acoustic monitoring at met towers. Few fatality monitoring studies have been conducted at met towers for bats in the U.S. To Foresight's knowledge, no records exist of bat fatalities resulting from collisions with guyed or un-guyed met towers. Avian and bat avoidance and minimization and baseline analysis monitoring would be addressed in the ABPP, currently under development in coordination with the USFWS and AGFD.
FACILITY DESIGN			
F-2.13	The commenter observes that the goal of monitoring studies is to inform the turbine arrangement and operating schedules for the wind projects. It states that negative impacts to raptor species can be minimized with tower configuration that uses clustering to	Table 2.7-1	Pre-construction studies have been conducted, and additional studies would be completed prior to final micro-siting to help inform avoidance and minimization to bird and bat impacts from the wind project. Turbine siting considerations include siting turbines at a minimum distance of 100 meters or more from canyon edges. The efficacy of using non-bladed pylons at string edges as a tool to reduce the likelihood

TABLE 10.2-2
COMMENT RESPONSES – RESOURCE PROTECTION MEASURES

Comment No.	Comment	Revisions at	Response
	minimize gaps and that incorporates non-bladed pylons at string edges. In addition, turbines sites on mesa rims should be placed at least 50 meters from the rim edge to minimize impacts to raptors.		of raptor collisions at comparably sized and comparably located wind projects has not been proven based on literature reviewed to date. Nonetheless this practice may be considered or provided as an option in the Adaptive Management Plan of the ABPP being developed in consultation with USFWS and AGFD. Additional mitigation measures for raptors are included in Table 2.7-1 and would be included within the ABPP and within the Adaptive Management Plan. Regarding raptor nesting and migration corridors, the project avoids active and known nests, and the biological evaluation area is not a migration corridor. WTGs would not be sited within 100 meters of the rims of Grapevine or Diablo canyons to minimize potential negative effects to birds.
S-2.21	The commenter emphasizes the importance of flexibility in arranging and operating turbines so that impacts on wildlife can be avoided, minimized, and/or mitigated. Tower configurations that cluster to minimize gaps and that incorporate non-bladed pylons at string edges would reduce negative impacts on wildlife.		
O-2.4	Research suggests that by avoiding raptor nesting and migration corridors, raptor fatalities can be minimized. Through wildlife surveys, scientists can also identify where raptors spend their time searching for prey, and these areas can then be avoided for turbine placement.		
O-2.5	The commenter also observes that research indicates it is valuable to avoid canyons, passes, and other migration pathways to minimize impacts. Valleys, swales, and low passes have been found to be used most by migrating birds and should be avoided.		
O-2.6	The commenter requests that setbacks from windward rims be required. Various studies have shown high use by raptors of rim edge habitats. Required setbacks of 100 meters for turbines can help reduce loss of raptors.		

TABLE 10.2-2
COMMENT RESPONSES – RESOURCE PROTECTION MEASURES

Comment No.	Comment	Revisions at	Response
O-2.7	The commenter requests that turbines be sited in open habitats at least one mile from woodland areas in order to reduce the likelihood of bat mortality. The main bat species known to be affected by wind turbines are woodland species. It is particularly important to completely avoid any old growth forest areas.		Direct impacts to *old growth* forestlands are not anticipated from development because there are no ponderosa pine stands in the wind park study area and less than 15 acres (representing less than 9.01 percent of estimated ponderosa pine vegetation type National Forest lands within the project area) of early seral stage ponderosa pine within the location of the tie-line. The Forest Land and RMP (1986, as amended) defines old growth forest based on the presence of large trees, presence of a number of large dead trees, adequate canopy cover within groups of trees, and presence of a number of large downed wood. All of these criteria need to be met to define a stand as old growth. The project area does not include any ponderosa pine vegetation that meets any of these criteria. Site visits of the project area documented that ponderosa pine which would be impacted include transition zone pine where small pine trees are encroaching within grassland habitat. Wind park components have been sited in the preliminary layout plan to reduce this impact. While the bat species most heavily impacted by wind-energy projects include woodland species such as hoary bat, silver-haired bat, and eastern red bat, those species are most heavily impacted during fall migration periods and available information is not conclusive as to whether bat mortality is associated with landcover or vegetation type. Please see Section 3.2.2.2 of the EIS for additional information.
SCHEDULING CONSTRUCTION AND OPERATION			
F-2.6	The commenter recognizes that the wind farm would operate 24 hours a day, 365 days per year. The commenter requests the project consider operational flexibility to allow particular turbines to be turned off during certain times to avoid negative impacts on wildlife, particularly migratory birds or bats. It further recommends that the operating schedule, its potential effects, and possible minimization measures be included in the ABPP currently under development.	Section 2.2 Table 2.7-1	The adaptive management plan of the ABPP, being developed in consultation with USFWS and AGFD, will include a toolbox of operational practices and/or compensatory measures; individual practices would be implemented as needed if post-construction monitoring demonstrates that impacts are greater than anticipated. This toolbox may include curtailment strategies such as cut-in speed adjustments to reduce bat fatalities. Pre-construction studies have been conducted and additional studies would be completed prior to final micro-siting to help inform avoidance and minimization to avian and bat impacts from the wind project. Pre-construction studies results would be used to inform final micro-siting decisions for the initial phase. Data collected during final design and post-construction from the initial phase would be used to help inform design and operations of later phases.
O-2.8	Research indicates that turbines should be shut down in late summer and early fall when bats are migrating and mortalities are highest.		
O-2.9	The commenter requests that a minimum “cut-in” speed of six meters per second be required to avoid bat mortalities at slow turbine speeds. There is a correlation between bat mortality and turbine operation during light wind speed.		

TABLE 10.2-2
COMMENT RESPONSES – RESOURCE PROTECTION MEASURES

Comment No.	Comment	Revisions at	Response
S-2.22	AGFD requests Foresight consider greater flexibility in its operating schedule than a 24/7 arrangement, to allow particular turbines to be turned off during certain times to avoid negative impacts on wildlife, particularly migratory birds or mammals. Curtailment strategies such as reducing cut-in speeds may reduce bat fatalities. Pre- and post-construction studies should be used in making determinations about turbine arrangement and operating schedules.		
O-2.12	The commenter recommends that turbine areas be closed to vehicles and human use during the period of habitation by sensitive species of wildlife.		The comment is noted. It is not possible to close the area to vehicles or human use as the wind park is located on working ranchlands with a checker-board private and State trust landownership pattern. However, the frequency of site visitation by wind park personnel during wind park operations is expected to be low, with most activity at the operations/maintenance building during the work week. The project was located to minimize impacts to sensitive species habitat by avoiding sensitive species' habitat types as much as possible. In addition, RPMs have been designed to avoid, minimize and mitigate project impacts to wildlife, and are included in the Final EIS. A post-construction study plan to monitor the effects of the project on wildlife and an Adaptive Management Protocol Plan are included in the ABPP being developed in coordination with the USFWS and AGFD.

TABLE 10.2-3
COMMENT RESPONSES – RESOURCE ANALYSIS

Comment No.	Comment	Revisions at	Response
AIR QUALITY – EMISSIONS ANALYSIS			
F-4.20	The commenter states that the EIS should contain a more robust analysis of emissions from construction, vehicle use, equipment use, and on-site electricity generation.	Section 3.5.1.2	In response to comments received, an expanded, quantitative air emissions analysis was developed for the construction of the project. Earthmoving and tailpipe emissions from construction vehicles and equipment would produce air emissions for up to 18 months of the initial or subsequent construction phases. Fugitive emissions would result from land clearing; excavation for WTG and transmission tower foundations; roadway construction, and construction of the operations/maintenance building, step-up substations, and Western's switchyard. Vehicular activity required to erect and cable WTGs and transmission towers would also produce fugitive emissions. The on-site concrete batch plant and one or more borrow pits would function as point sources of air emissions. Overall, construction emissions would vary substantially from day to day, depending on the level of construction activity, the specific operations, and the prevailing meteorological conditions. Total emissions of 10-micron particulate matter (PM_{10}) are estimated at 38 tons for an 18-month construction phase. Total PM_{10} for the same period is estimated at 93 tons with Nitrogen Oxide (NO_x) estimated at nearly 51 tons and Carbon Oxide (CO) at nearly 22 tons. The Final EIS was updated in Section 3.5.1.2 to include the expanded, quantitative air emissions analysis.
S-1.1	The commenter states that the proposed project is located in an attainment area for PM_{10} and other air pollutants, and is likely to have a de minimis impact on air pollution.		

TABLE 10.2-3
COMMENT RESPONSES – RESOURCE ANALYSIS

Comment No.	Comment	Revisions at	Response
AIR QUALITY – EMISSIONS MITIGATION			
S-1.2	The commenter recommends site preparation and construction measures to reduce disturbance of particulate matter, specifically to minimize land disturbance: suppress dust on traveled paths which are not paved through wetting, use of watering trucks, chemical dust suppressants, or other reasonable precautions to prevent dust entering ambient air; cover trucks when hauling soil; minimize soil track-out by washing or cleaning truck wheels before leaving construction site; stabilize the surface of soil piles; and create windbreaks.	Table 2.7-1 Section 3.5.2.2	The construction and operational phases of the proposed wind park would be subject to State of Arizona requirements to apply *reasonable control measures* to prevent dust emissions. The Draft EIS included RPMs to reduce the mass emissions of particles and visible emissions during construction of the wind park by restricting construction vehicular speeds on unpaved roadways to 25 miles per hour (mph) or less; applying gravel or other surface palliatives to unpaved areas and roadways; covering or otherwise shielding stock piles of soil or similar construction materials; and installation of vehicle track-out areas or wash-down areas to prevent fine dust from being tracked onto adjacent paved roads on Forest-managed lands. Additional RPMs for the proposed wind park added to the Final EIS would include frequent application of water or other surface palliative to active earthmoving areas and restriction of ground-disturbing construction activities during high wind events. Additional new RPMs for point-source emissions would include enclosing transfer points and water sprays or other palliative treatments to control emissions from material handling and loading activities; use of diesel engines that meet current EPA emissions performance standards (applicable to engines between 100-750 horsepower); and use of ultra-low sulfur diesel fuels for all equipment for which such fuel is technically feasible to substantially reduce tailpipe emissions of Sulfur Dioxide (SO_2) and PM_{10}. Western, in managing the construction of the proposed switchyard, would ensure its construction contractor abides by air quality provisions in it construction specifications.
S-1.3	The commenter recommends site restoration measures to reduce disturbance of particulate matter, specifically revegetate any disturbed land not used; remove unused material, and remove soil piles via covered trucks.		
F-4.21	The commenter recommends Foresight develop a Construction Emissions Mitigation Plan to incorporate all applicable requirements and additional measures to reduce emissions. Additional measures for fugitive dust source control, mobile and stationary source control and administrative control, as detailed in the comment document, should be incorporated in the final decision documents.		

TABLE 10.2-3
COMMENT RESPONSES – RESOURCE ANALYSIS

Comment No.	Comment	Revisions at	Response
AIR QUALITY – CLIMATE CHANGE			
F-4.22	The commenter requests that the EIS assess how climate change could affect the proposed project and how project impacts could be exacerbated by climate change. It suggests quantifying and compiling the greenhouse gas emissions that would be produced by other types of electric generating facilities with comparable production, and comparing these values.	Section 3.5.1.2 Table 3.5-1	According to the 2009 report, *Global Climate Change Impacts in the United States*, climate-related changes have already been observed and are expected to grow. Rapid rates of warming are anticipated to lead to particularly large impacts on water resources and natural ecosystems. Water supplies are projected to become increasingly scarce while flooding events will become more frequent. Increasing temperature, drought, wildfire, and invasive species will accelerate the transformation of traditional landscapes. Climate change could exacerbate environmental impacts from the proposed project. Recent rapid warming trends in the southwest region would affect moisture content in vegetation, reducing forage for cattle and wildlife, and increase wildfire frequency and severity. These conditions would make revegetation of disturbed areas more difficult and impose an additional stress on wildlife. In terms of alleviating greenhouse gas (GHG) emissions, the proposed project could displace a small amount of Carbon Dioxide (CO_2) emissions, between 205 and 495 metric tons annually. Arizona's electric power industry generated just under 112 million megawatt hours (MWh) of electricity in 2009 that required 53.5 million metric tons of CO_2, the largest component of GHG emissions. As a whole, the industry required 0.48 metric ton of CO_2 per MWh of electricity. A breakout of 2009 industry emissions data by fuel source has been added to the EIS in Table 3.5-1.
BIOLOGICAL RESOURCES – ASSESSMENT OF IMPACTS			
F-1.1	While the proposed plan is adjacent to a small parcel of BLM land, it poses no resource concern.		Comment noted.
F-2.3	The commenter asserts that two species, Chiricahua leopard frog (*lithobates chiricahuensis*) and the narrow-headed garter snake (*thamnophis rufipunctatus*) have low potential to occur in the project area. The closest amphibian of concern to the project area is the northern leopard frog (*lithobates pipiens*) that occurs on Anderson Mesa.	Section 3.2.1.2	In response to this comment, the Final EIS has been modified in Section 3.2.1.2 to state that USFWS provided comment that these species are not likely to occur within the project area or be affected by the project.
F-2.7	The commenter recommends that discussion of Chiricahua leopard frog (*lithobates chiricahuensis*) and the narrow-headed garter snake (*thamnophis rufipunctatus*) be dropped.		

TABLE 10.2-3
COMMENT RESPONSES – RESOURCE ANALYSIS

Comment No.	Comment	Revisions at	Response
F-2.10	The commenter noted that point count surveys were conducted during mid-day and therefore not representative of nocturnal species, passerines, or burrowing owls that forage early morning or late evening. It recommends that this information be included in the Final EIS and in the Avian Bat Protection Plan.		The point count surveys previously completed at study sub-area A were conducted during "daylight hours" (Appendix D-1), starting as early as 7:00 a.m. and ending as late as 5:36 p.m., therefore, passerines or other birds that forage early morning or evening were accounted for in the survey. Additional pre-construction bird use surveys would be completed throughout the wind park study area, including: 1) avian use surveys using a similar methodology to those completed during 2007-2008, 2) breeding bird surveys completed during the early morning period at representative habitats for songbirds, and 3) surveys completed to detect nocturnally active species and burrowing owls. A draft study plan describing these surveys has been discussed with the AGFD and USFWS. Prior to construction of the initial build-out phase of the wind park, a total of two years of pre-construction avian use surveys will have been completed within this study area. Data collected during these surveys would be incorporated into the final ABPP being prepared for the wind park, and considered when implementing the subsequent phases. These studies have been designed to further inform micro-siting decisions prior to construction.
F-3.1	The commenter observes that the public would benefit from a discussion of available scientific information regarding impacts of wind energy projects on bird and bat species. It suggests including an assessment of mitigation options that avoid or significantly reduce impacts on these species.	Section 3.2.2.2	In response to this comment, additional information from publically available scientific studies and reports on the impacts of wind energy projects on birds and bats have been included in the Final EIS in Section 3.2.2.2. Avoidance, minimization, and mitigation measures designed to avoid or reduce impacts to birds and bats were included in the Draft EIS as RPMs, and additional measures have been added to the Final EIS. Numerous references and literature citations have been provided which describe in further detail important components of these topics.
F-4.17	The commenter recommends Western include the BA and the outcome of its consultation with USFWS in the Final EIS.		Western has completed a BA for the proposed project. The results of the USFWS consultations are summarized in the Final EIS. Western submitted the BA to the USFWS on February 9, 2012 with the determination that the proposed project may affect, but is not likely to adversely affect, the Mexican spotted owl. The USFWS concurred with this determination in a concurrence letter dated March 12, 2012.
O-2.2	Thorough surveys of birds, mammals, plants and other wildlife are an essential first step in avoiding and minimizing impacts. This includes surveys in all seasons to capture migration periods and fluctuations in population depending on the season. Surveys should be done at night as well as during daylight as migration, particularly of birds, often happens at night. Since less is known about affected species such as bats, monitoring is very important to determine the baseline presence of bat species.	Table 2.7-1 Section 3.2.2.2	Pre-construction wildlife and plant surveys have been conducted, and additional studies are currently underway or are planned prior to construction of the initial phase of the wind park. Avian surveys were conducted in all seasons for sub-study area A. Additional pre-construction bird use surveys will be completed throughout the wind park study areas, including: 1) avian use surveys using a similar methodology to those completed during 2007-2008, 2) breeding bird surveys completed during the early morning period at representative habitats for songbirds, and 3) surveys completed to detect nocturnally active species and burrowing owls. Bat acoustic surveys were completed in sub-study area A. Additional bat surveys including acoustic monitoring and mist-net surveys will be conducted throughout the wind park study area. Surveys to document other important wildlife such as prairie

TABLE 10.2-3
COMMENT RESPONSES – RESOURCE ANALYSIS

Comment No.	Comment	Revisions at	Response
			dogs were undertaken within sub-study area A and throughout the wind park study area. The methodology for these surveys has been discussed with the AGFD and USFWS. Prior to construction of the initial phase of the wind park, a total of two years of pre-construction avian use surveys will have been completed for the initial phase area. Similar surveys will have been conducted for subsequent phase areas prior to construction. Data collected during these surveys will be incorporated into the final ABPP being prepared for the wind park.
O-2.16	Scientific studies indicate that roads and motorized uses have serious detrimental effects on habitats and wildlife. These effects include direct, indirect, and cumulative impacts, ranging from mortality from collisions with vehicles, modification of animal behaviors, altered use of habitats, facilitation of the spread of exotic, invasive and parasitic species, adverse genetic effects and fragmentation of connected habitats. These impacts are not limited to paved route networks. Cole states that: *off-road vehicle impacts are particularly serious and difficult to manage.*		Consistent with Foresight's approach to minimizing impacts, the footprint of the site access and service roads were reduced to the extent possible. Table 2.7-1 lists RPMs that Foresight has committed to. For example, during construction, Foresight has committed to implementing a 25 mph speed limit along the right-of-way and access roads to minimize the risk of wildlife collision. Foresight does not anticipate off-road vehicle use during construction or operations. BMPs for exotic and invasive species are included in the RPMs in the Final EIS.
S-2.1	The commenter considers the project to be a Category 3 project under its Wind Guidelines, that is, it has high or uncertain potential for wildlife impacts involving birds and/or bats, special status species, or other species. Indicator project characteristics include number of proposed turbines and project size, special status species occurring on or adjacent to the site, and the presence of current or historic prairie dog colonies that may concentrate raptor activity.	Table 2.7-1 Section 3.2.2.2	The comment is noted. Foresight has been in communications with AGFD since 2007 regarding the presence of sensitive species and critical habitat, and the conduct of avian and bat studies. Foresight has consulted with AGFD and USFWS outside of the EIS process to develop wildlife study plans and draft RPMs to avoid, minimize and mitigate impacts to wildlife. Foresight is voluntarily developing an ABPP in consultation with the USFWS and AGFD. See Section 3.2.2.2 in the Final EIS for information on potential levels of impact on wildlife and habitat.
T-2.7	The commenter determined that this proposal will cause significant adverse effects to biological resources significant to the Hopi Tribe. The commenter stated it does not support a crossing of Diablo Canyon, or any disturbance within the Canyon or on the east side of the Canyon.	Section 2.6 Section 3.3.2.2	Western has noted the commenter's support for the No Action Alternative and this comment will be taken into account in Western's decision on whether or not to grant Foresight's interconnection request. Based on the commenter's recommendation to develop an additional alternative for the development of the proposed wind park, Western has revisited its alternatives analysis. Based on the comment, Western has updated the EIS in Section 2.6, Alternatives Considered but Eliminated. Regarding the comments on adverse effects to historic properties, Western's determinations of effect on properties determined to be eligible to the National Register of Historic Places (NRHP) will be made in accordance with stipulations in the Programmatic Agreement (PA) regarding the construction of the proposed Grapevine Canyon Wind

TABLE 10.2-3
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Comment No.	Comment	Revisions at	Response
			Project. This PA was executed on September 3, 2010. Western's and the Forest Service's goal is to achieve a *no adverse effect* by avoiding National Register-eligible cultural resources to the extent feasible and practical. The PA specifically includes a stipulation that should historic properties be identified during additional Class III inventory, Western, in consultation with Foresight and consulting parties to the PA, would attempt to move the impacting activity, modify the activity to reduce or eliminate adverse effects, or if possible cancel the activity. Should none of these options be possible, Western would prepare a treatment plan following the guidance provided in the Historic Property Treatment Plan per stipulations in the PA. Regarding the comments on effects to biological resources, raptor nest surveys were conducted within a ten-mile buffer of all project components, including in the vicinity of the proposed access road crossing of Diablo Canyon. Sensitive species' habitat was also assessed along the primary access route. No nests or habitat were found. Consistent with Foresight's approach to minimizing impacts, the footprint of the crossing route was reduced to the extent possible. Additional pre-construction clearance surveys are being conducted or are planned for sensitive biological resources, in consultation with USFWS and AGFD. Information collected during post-construction studies for the initial phase will help inform siting of subsequent phases, and will be reported as part of the ABPP being voluntarily developed for the wind park in consultation with the USFWS and AGFD. Based on these findings and consultations, Foresight would implement an adaptive management plan within the ABPP if the project impact on birds and bats is greater than expected.
T-2.10	Based on potential adverse effect to cultural and biological resources, and the lack of alternatives, we support the No Action Alternative and recommend Western and Forest develop an alternative that defines the project area as study area A and eliminates study areas B and C from further consideration.		
BIOLOGICAL RESOURCES – BATS			
F-3.2	The commenter states that bats of certain species are dying at wind turbines in unprecedented numbers, and causes of bat fatalities at turbines remain unclear. It recommends that the Final EIS include scientific information from studies by Cyran and others that synthesize the hypothesized causes of bat fatalities at wind turbines, examine mating behavior as causal, and identify certain species of bats as highly susceptible to	Section 3.2.2.2	In response to this comment, additional information from publically available scientific studies and reports on the impacts of wind energy projects on birds and bats have been included in the Final EIS in Section 3.2.2.2. Avoidance, minimization, and mitigation measures designed to avoid or reduce impacts to birds and bats were included in the Draft EIS as Resource Protection Measures, and additional measures have been added to the Final EIS. Numerous references and literature citations have been provided which describe in further detail important components of these topics (see Section 3.2).

TABLE 10.2-3
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Comment No.	Comment	Revisions at	Response
	mortality at wind turbines.		
S-2.12	The commenter observes that AGFD recognizes 28 species of bats in Arizona, not 30. AGFD is a more appropriate source for information about Arizona's bat populations than non-governmental organization (NGO) sources.	Section 3.2.1.2	The text of the Final EIS has been updated in Section 3.2.1.2 to read: *Based on information from the AGFD, and range maps and species accounts from Bat Conservation International (2009), 28 to 30 species of bat are known to occur in Arizona*.
S-2.13	The commenter states that, *"Although "no known bat hibernaculum or roosts of importance have been noted within the vicinity of the wind park study area," it is important to note that approximately half of AZ's 28 species hibernate, and that there are approximately 10 or fewer known hibernacula for all hibernating bat species in AZ; therefore, saying "no known bat hibernacula" is certainly not an indication that there's an absence of those type of roosts (p. 104)."*	Section 3.2.2.2	In response to the comment, text has been updated in the EIS (see Section 3.2.2.2). No known bat hibernacula or roosts of importance have been noted within the vicinity of the wind park study area by the AGFD or the USFWS, however, formal surveys have not been completed in this area by Foresight or the AGFD to search for bat hibernacula or roosts. Arizona contains few documented hibernacula (ten) and the wind park is not situated in an area which would be likely to contain large hibernacula relative to the surrounding region. Features with the highest probability of containing bat roosts or hibernacula (rocky features with caves or crevices such as canyon walls, or large snags or loose bark trees) would be avoided by the project.
S-2.14	The commenter requests the EIS define *extraordinary fatality rate* and recommends the rate be defined as two or more bats per turbine per year.		The comment is noted. Foresight defines an extraordinary fatality rate as an observed fatality rate significantly higher (statistically) than the regional average, as determined through formal post-construction monitoring studies that incorporate carcass searches and bias trials in order to estimate bat fatalities. These post-construction studies would be completed at Grapevine so that operations can be evaluated and modified to the extent feasible. Subsequent to receiving this comment, Foresight consulted with USFWS and AGFD and received support for developing an adaptive management protocol as a component of an ABPP. The results of post-construction monitoring studies, including comparable studies, where applicable, would be discussed with the AGFD and USFWS.
S-2.15	The commenter disagrees that the potential for occurrence of the big free-tailed bat (*nyctinomops macrotis*) is *moderate*. It recommends the potential for occurrence is *high* within the project area because this species can fly great distances between roosting and foraging areas.		In response to this comment, the high potential for occurrence of big free-tailed bat in the project study area is noted as recommended by the commenter. The comment references text in the Draft EIS Volume II, Appendix D. 1 p. 53; please note that Appendix D.1 was not revised for the Final EIS. The Draft EIS text, Section 3.2.1.2, subheading "Bats," stated that the species was one with the potential to roost or forage on the site, therefore, the potential for occurrence consistent with the comment was reflected in the Draft EIS text.
S-2.16	The commenter recommends that the potential for occurrence of Allen's big-eared bat is high, not low as indicated in the Draft EIS, because this bat can easily travel 20 miles one way in a night between forage and roosting areas.	Table 3.2-1	The high potential for occurrence of Allen's big-eared bat, also known as Allen's lappet-browed bat, in the project study area is noted as recommended by the commenter. The Final EIS, Table 3.2-1, was modified to address this comment (using the name Allen's lappet-browed bat).

TABLE 10.2-3
COMMENT RESPONSES – RESOURCE ANALYSIS

Comment No.	Comment	Revisions at	Response
S-2.17	The commenter disagrees that the project will not affect breeding habitat or important potential hibernacula for the Allen's lappet-browed bat. This species may pass through the transmission line area in transit between foraging areas in the surrounding region. AGFD has no records for hibernacula used by this species, therefore it is impossible to evaluate many issues associated with effects to it. The commenter recommends that the potential for occurrence of Allen's lappet-browed bat is high, not low as indicated in the Draft EIS, because this bat can fly long distances between forage and roosting areas.	Section 3.2.2.2	In response to this comment, the high potential for occurrence of Allen's lappet-browed bat in the project area is noted as recommended by the commenter. The Final EIS has been modified in Section 3. 2.2.2 to include the conclusion that this species may pass through the transmission line area in transit between foraging areas in the surrounding region.
BIOLOGICAL RESOURCES – RAPTORS AND OTHER BIRDS OF CONCERN			
F-2.11	The commenter asserts that raptors other than golden eagles are a trust species missing from Draft EIS that should be addressed more fully rather than left to discussion in the appendices. Relatively high raptor abundance was documented during avian use surveys completed in sub-study area A between 2007–2008 at survey locations located near prairie dog towns within the proposed project area. Based on the analysis, the commenter estimates that up to about 50 raptors could be killed annually at 500 MW build-out, with an estimated range of 0-175 raptors (90 percent CI). The greatest raptor abundance occurred at three plots that were within or adjacent to prairie dog towns. Raptors, especially golden eagles and red-tailed hawks, will be vulnerable to collision with any turbines placed in these areas. The commenter requests this issue be addressed in the ABPP.	Table 2.7-1 Section 3.2.1.2 Section 3.2.2.2	In response to this comment, text has been updated in Final EIS regarding raptors, including golden eagles; refer to revised Sections 3.2.1.2 and 3.2.2.2. RPMs have been developed to avoid, minimize and mitigate impacts to raptors (see Table 2.7-1). Foresight is voluntarily developing an ABPP for the project in consultation with the USFWS and AGFD. Impacts to raptors are included within the ABPP. Foresight has designed the initial phase to directly avoid prairie dog towns and raptor nest sites, based on the results of spring 2011 field surveys. Discussion about this potential impact was also added to the Final EIS in Section 3. 2.1.2. Similar effort would be conducted for future phases.
F-4.12	The commenter recommends a discussion in the Final EIS of the applicability of the recently finalized USFWS permit regulations under the Bald and Golden Eagle Protection Act for take of eagles on a limited basis, provided that the take is compatible with preservation of the species and cannot be practicably avoided.	Section 1.3.2.3	Additional text has been added to the Final EIS regarding the BGEPA (see Section 1.3.2.3). Foresight is working in consultation with USFWS to address recent Federal draft guidance for eagles. Additional surveys and evaluation for golden eagles are being conducted, in consultation with USFWS.

TABLE 10.2-3
COMMENT RESPONSES – RESOURCE ANALYSIS

Comment No.	Comment	Revisions at	Response
S-2.7	Golden eagles should be considered a special status species per AGFD's State Wildlife Action Plan and the Bald and Golden Eagle Protection Act. The Draft EIS underestimates the potential for negative impacts on golden eagles.	Section 3.2.1.2 Section 3.2.2.2	In response to this comment, text has been updated in the Final EIS regarding golden eagle; refer to revised Sections 3.2.1.2 and 3.2.2.2.
S-2.11	The commenter's own surveys located active prairie dog colonies in study area C as well as study area A that is referenced in the Draft EIS. The Draft EIS states that the risk of raptor mortality would be lower in study areas B and C based on the assessment that prairie dog numbers are lower in these locations. This assertion is made without the benefit of inventory for either area B or C. The presence of prairie dogs in area C, in addition to the topographic features within study area B, indicate that the risk of raptor mortality may be similar or even greater in study areas B and C than it is in study area A.	Section 3.2.1.2	Additional prairie dog town mapping has been completed throughout the wind park study area since this comment was received. The EIS has been updated to include this information in Section 3.2.1.2. Additional avian surveys are underway such that two years of pre-construction survey work will be completed for the initial phase and subsequent phases to characterize species use. Studies will include prairie dog town mapping.
F-2.4	The commenter recommends correcting the EIS to state that USFWS authorizations include the MBTA and the BGEPA in addition to the Endangered Species Act (ESA).	Table 1.3-1	In response to this comment, the EIS has been modified to address this comment, including an update to Table 1.3-1.

TABLE 10.2-3
COMMENT RESPONSES – RESOURCE ANALYSIS

Comment No.	Comment	Revisions at	Response
F-2.27	The Draft EIS does not specifically discuss Birds of Conservation Concern, which are demonstrating population declines and may be considered for candidate status under the ESA in the future. The project area lies at the edge of Bird Conservation Regions 16 and 34. Specifically, the piñon jay may be at relatively high risk of collision with project infrastructure. Foresight may want to specifically address how to minimize impacts to this species in the ABPP.		In response to this comment, text regarding USFWS Birds of Conservation Concern has been updated in the Final EIS in Section 3.2.1.2 to address this comment. Although a total of 196 observations of piñon jay were made during avian use surveys completed between 2007–2008 at Sub-study area A, only 11.2 percent of these observations were of birds flying within the proposed wind turbine generator rotor swept area, characterized in the report as the Zone of Risk. West Inc. maintains a proprietary database of post-construction monitoring studies and performed a query on August 11, 2011. This review found 74 public reports of post-construction fatality monitoring studies of operating wind projects in North America of which zero piñon jays were reported as wind turbine casualties. These results do not suggest that the species may be especially prone to wind-turbine collision. Nonetheless, additional surveys are underway which will provide further information on the relationship between site characteristics, bird use and abundance, and the project. Post-construction surveys would be completed at the project which would provide information on the fatality rate of piñon jays observed at the wind park study area. Foresight is voluntarily developing an ABPP in consultation with the USFWS and AFGD, which will provide for consultation during ABPP implementation and project operation. Information collected during additional surveys will be incorporated into the plan and additional mitigation measures may be developed

TABLE 10.2-3
COMMENT RESPONSES – RESOURCE ANALYSIS

Comment No.	Comment	Revisions at	Response
F-3.9	The commenter asserts that USFWS Birds of Conservation Concern is a trust species missing from Draft EIS that should be addressed more fully rather than left to discussion in the appendices. These species are demonstrating population declines and may be considered for candidate status under the ESA. Abundance of birds, particularly passerines, was substantial at point count plot nine, averaging 36 birds per 20 minutes of survey. The commenter recommends that vegetation, topography, and other site characteristics be scrutinized to determine why avian abundance is higher at this site and possibly sites with similar characteristics that were not surveyed. Wind turbine generator siting should be avoided until additional surveys indicate whether high levels of bird mortality are likely. The commenter suggests that the ABPP review these data as well as displacement impacts to birds, and propose construction and site management practices to reduce these effects.		based on the results of these surveys as part of the adaptive management protocol.
BIOLOGICAL RESOURCES – BIG GAME			
O-2.15	The commenter is particularly concerned about the impact of this project on the pronghorn on Anderson Mesa, *"There has been considerable controversy to date regarding the decline of this herd and the impacts of livestock grazing. The numbers have significantly dwindled. Pronghorn are especially sensitive to roads and fences. This project includes construction of a transmission line through Anderson Mesa and the heart of some pronghorn habitat. The construction…entails building a road under the lines."*		The comment is noted, and Foresight is in consultation with AGFD regarding pronghorn. Project planning would take into consideration minimization efforts to reduce impacts to wildlife. The Draft EIS concluded that effects would be minor because the proposed project is not in a major migratory route. Construction may result in short-term changes in pronghorn movement or behavior if pronghorn occur in the project area during construction, as discussed at response O-1.1 in Table 10.2-2 (RPMs, *Big Game*). Regarding project operation, location, and siting, RPMs are intended to avoid or minimize impacts on wildlife, including migratory large mammals. Operation of the tie-line and switchyard would also not be expected to have an effect on pronghorn populations. Given the small acreage of grassland habitat impacted by these two facilities, and the fact that this habitat type is abundant throughout the region, the Anderson Mesa pronghorn population trends and habitat viability would not be impacted by construction or operation of the tie-line and switchyard.

TABLE 10.2-3
COMMENT RESPONSES – RESOURCE ANALYSIS

Comment No.	Comment	Revisions at	Response
S-2.10	The commenter states that the Draft EIS underestimates the uncertainty regarding potential negative impacts the project may have on big game and their habitats. AGFD recommends Foresight support further research designed to better understand the impacts of wind project construction and operation on big game including pronghorn. It requests the opportunity to discuss funding for its research proposal. AGFD is aware of only one study, conducted by West, Inc. in Wyoming where pronghorn populations are generally larger, that indicates some big game resilience to wind development. AGFD data demonstrate that individual animals move through all three study areas but do not assess the degree to which pronghorn utilize the area or measure the potential impacts of development on their movement, behavior, or reproductive success.		Western has revisited its analysis on big game and their habitats and believes that the Final EIS appropriately addresses effects to big game. The Draft EIS concluded that effects would be minor because the proposed project is not in a major migratory route. Construction may result in short-term changes in pronghorn movement or behavior if pronghorn occur in the project area during construction, as discussed at response O-1.1 in Table 10.2-2 (RPMs, *Big Game*). Regarding project operation, location, and siting, RPMs are intended to avoid or minimize impacts on wildlife, including migratory large mammals. Operation of the tie-line and switchyard would also not be expected to have an effect on pronghorn populations. Given the small acreage of grassland habitat impacted by these two facilities, and the fact that this habitat type is abundant throughout the region, the Anderson Mesa pronghorn population trends and habitat viability would not be impacted by construction or operation of the tie-line and switchyard. The commenter's request for funding is outside the scope of the EIS process, but the commenter's reference of prior studies addressing effects to big game is appreciated.
CULTURAL RESOURCES – GOVERNMENT TO GOVERNMENT CONSULTATION			
F-4.23	Include a copy of the PA in the Final EIS, and describe the process and outcome of government-to-government consultation between Western and each of the Tribal governments within the project area. Specifically, issues that were raised and disposition of those issues in relation to the proposed action and selection of a preferred alternative should be discussed.	Section 1.4.3 Section 3.3.2.2	The PA is not part of the project's EIS review, but is a separate consultation process. The PA replaces the Section 106 process and includes commitments among Foresight, Western, and the Forest Service to involve the Advisory Council on Historic Preservation, the Arizona State Historic Preservation Office, and Tribes in determinations regarding the effects to any properties for or eligible to the NRHP. Western would manage construction of the proposed switchyard. The Applicant would manage construction of the wind park and transmission tie-line. The Applicant's, Western's, and the Forest Service's goal is to achieve a no adverse effect by avoiding National Register-eligible cultural resources to the extent feasible and practical. The PA provides a process to: 1) identify previously recorded cultural resources and traditional cultural properties; 2) review reports of its archaeological identification efforts (Class III surveys); 3) determine eligibility for National Historic Register nomination of sites that would be unavoidably affected; and 4) move, modify, or cancel impacting activities to reduce or eliminate adverse effects to historic properties. Most of these activities would take place subsequent to the Final EIS. If Western cannot avoid an eligible historic property during construction of the proposed switchyard, or if the Applicant cannot avoid an eligible property during construction of the proposed wind park and transmission tie-line, a comprehensive Historic Properties Treatment Plan would be prepared and implemented. Tribes have been invited to participate in cultural resource surveys, and Hopi and Zuni members

TABLE 10.2-3
COMMENT RESPONSES – RESOURCE ANALYSIS

Comment No.	Comment	Revisions at	Response
			participated in field visits to date. A summary of the government-to-government consultation process was added to the EIS in Section 1.4.3 in response to this comment. The PA will be incorporated in the project record and is referenced in the EIS, but is not included in the Final EIS.
T-1.1	The proposed actions for the...project ***will not have an effect*** [emphasis original] on the White Mountain Apache Tribe's Cultural Heritage Resources and/or historic properties and at this point we do not believe it is necessary to contact and/or include the Tribe any further. Regardless, we further recommend that any/all ground disturbance should be monitored ***if*** [emphasis original] there are reasons to believe that human remains and/or funerary objects are present. If such remains and/or objects are encountered, all construction activities should be stopped and the proper authorities and/or affiliated Tribe(s) be notified to evaluate the situation.		In accordance with the PA, the White Mountain Apache Tribe will be informed of progress of the project through the Western and Forest Service consultation process. If any sites of Apache ancestry are discovered, Western or the Forest Service would contact the Tribe. Tribes also have been invited to participate in cultural resource surveys, and Hopi and Zuni members have participated in field visits to date. If there are reasons to believe that human remains and/or funerary objects are present, Western would oversee the development of a comprehensive HPTP. The specific strategies proposed would be developed in consultation with the PA signatories. Also, if such remains and/or objects are encountered, construction would be immediately halted and further construction would not be allowed within 200 feet of the discovery until a cultural resource specialist arrives to assess the discovery. If human remains and/or objects are encountered on Forest-managed lands, the Forest Service would address in accordance with the Native American Graves Protection and Repatriation Act. Pursuant to A.R.S. §41-844 and §41-865, an agreement regarding the treatment and disposition of human remains, funerary objects and objects of cultural patrimony would be developed by the Arizona State Museum for State and private land.
T-3.1	The (Navajo) Nation notes that the project area lies within both private and State trust lands, so it wants to emphasize its concern that there are numerous cultural sacred sites and request that the Navajo Nation be kept updated on the project's progress.		
T-3.2	If the proposed project inadvertently discovers Navajo habitation sites, plant gathering areas, human remains and objects of cultural patrimony, the Nation's Historic Preservation Department, Traditional Culture Program requests that it be notified in accordance with the Native America Graves Protection and Repatriation Act.		
T-2.2	The Hopi Tribe does not believe the PA will ensure protection of National Register-eligible archaeological sites and Traditional Cultural Properties as asserted.		
CULTURAL RESOURCES – ANALYSIS OF IMPACTS			
T-2.1	The Hopi Tribe considers the effects to Cultural Resources, areas of interest to Native Americans, and visual impacts on Traditional Cultural Properties to be adverse.	Section 3.3.2.2	The Tribe's comments have been received and reviewed. Class III Cultural Resource and Traditional Cultural Properties surveys for all potentially affected areas would be completed prior to project construction. For the EIS, a Class I records review has been completed for the up-to-500 MW project evaluation area, and a Class III

TABLE 10.2-3
COMMENT RESPONSES – RESOURCE ANALYSIS

Comment No.	Comment	Revisions at	Response
T-2.3	Only a small percentage of the evaluation area has received a Class III survey, and therefore the Hopi Tribe does not believe the Draft EIS statement that, *"There would be no significant impacts to, or loss of a site of archaeological, Tribal or historical value that is listed, or eligible for listing, on the NRHP,"* or that *"there would be no adverse effect on cultural sites."* The commenter maintains this determination is based on insufficient data and is premature.		pedestrian survey has been completed for project elements on Forest-managed lands as well as the site access road. Western's and the Forest Service's goal is to achieve a *no adverse effect* by avoiding National Register-eligible cultural resources to the extent feasible and practical. The PA specifically includes a stipulation that should historic properties be identified during additional Class III inventory, Western in consultation with Foresight and consulting parties would attempt to move the impacting activity, modify the activity to reduce or eliminate adverse effects, or if possible, cancel the activity. Should none of these options be possible, Western would prepare a treatment plan following the guidance provided in the HPTP per stipulations in the PA. The EIS has been revised in Section 3.3.2.2 and the statement, "*Any unavoidable adverse impacts to cultural resources cannot be determined until the results of the Class III Survey and Traditional Cultural Properties Survey are completed*," has been removed since the PA includes stipulations to address discoveries and unanticipated effects, in addition to the stipulations defined above.
T-2.4	The Draft EIS acknowledges, *"Any unavoidable adverse impacts to cultural resources cannot be determined until the results of the Class III Survey and traditional Cultural Properties Survey are completed."* On page 194, however, the Draft EIS asserts, *"Because the proposed action is not likely to destroy NRHP-eligible sites, there would be no direct contribution to cumulative effects to cultural resources."*		
T-2.5	Therefore, we have determined that the project would cause significant adverse effects to biological resources, Hopi ancestral National Register-eligible archaeological sites, and Hopi Traditional Cultural Properties.		

TABLE 10.2-3
COMMENT RESPONSES – RESOURCE ANALYSIS

Comment No.	Comment	Revisions at	Response
VISUAL RESOURCES			
B-1.1	The commenter has no objection to the project overall, but having wind turbines extending 250–300 feet over the rim of Meteor Crater within just two or three miles would be very distracting to its visitors. Meteor Crater is a National Natural Landmark, and people come from all over the world to visit our location. When viewing the Crater, visitors are typically looking south or west. Having turbines on land that is within five miles south and west of Meteor Crater would be detrimental to the visitor's experience and could negatively affect our business. If turbines are located five miles or more from the location, the visitor experience would not be greatly affected because the intrusion into the viewshed would be much less.	Section 3.12.2.2	The Draft EIS notes that Meteor Crater is a National Natural Landmark designated by the National Park Service, and evaluates Meteor Crater visual resources and the potential for the project to impact visitors' experience. In evaluating impacts, the Draft EIS focused on views of the wind park from the Visitor Center patio and the rim of the crater that would experience minor and moderate adverse impacts, respectively. The relevant standard is the Coconino County Comprehensive Plan, Diablo Canyon RPA goal: "*Facilitate the development of alternative energy projects while maintaining the integrity of the ranches and preserving aesthetics and views*." This goal is further defined by the policy that wind projects "*shall be located at least one mile from major travel corridors, such as I-40 and SR 87*." The proposed project is consistent with this County goal. The EIS concludes that the permanent change created by introducing broad visual contrast into the natural landscape is an adverse impact that is minor to moderate (depending on the location of the viewer) and unavoidable. However, the changes that will occur with the wind park would not result in a deterioration of natural values on which the landmark designation is based. While the wind park would change the views at middle (0.5 to 4 miles) and background (beyond 4 miles) distances, the WTGs are not within the Meteor Crater boundaries and do not change the geologic features of the site. In addition, the WTGs locations and distance from the Meteor Crater are such that they would not be noticeable in the foreground views. In summary, Western determined that the WTGs would change the views from the site, but would not significantly impact the visitor's experience because the visitor's focus is on the crater itself and its history and geology. While visitors may enjoy the middle and background views from the site, those are not the primary features of the site. Finally, Foresight will consult with the management of Meteor Crater Enterprises during final design of the wind park to minimize visual impacts to middle and background views to the extent feasible.

TABLE 10.2-3
COMMENT RESPONSES – RESOURCE ANALYSIS

Comment No.	Comment	Revisions at	Response
WATER RESOURCES – WETLANDS			
F-4.3	The commenter observes that the Draft EIS presents contradictory information on the presence of woody wetland habitat and requests clarification whether wetlands are present in the Grapevine Canyon Wind Resource Area and the project evaluation area.	Section 3.6.2.2	The Draft EIS did not identify wetlands within the project evaluation area. Rather, the impact analysis was based on existing remote sensing databases (as described in Sections 3.2.1.2 and 3.6.1.1). The 2001 National Land Cover Database (NLCD) developed from Landsat images was referenced to characterize the effected environment. The 2001 NLCD uses 21 class definitions to describe land cover types across the United States, including *Woody Wetland* that is defined as, "*Areas where forest or shrub land vegetation accounts for greater than 20 percent of vegetative cover and the soil or substrate is periodically saturated with or covered with water*." This classification was mapped along the bottom of Grapevine Canyon, Canyon Diablo, and Jack Canyon. While *wetland* is in the title classification name, this mapping does not define whether wetlands exist within the limits of the project but rather establishes the potential for wetlands to occur. The Draft EIS also references the National Wetland Inventory which did not identify any vegetated wetland types within the limits of the project but did call out man-made stock ponds as potential impoundment areas. The Final EIS includes additional information about wetlands and waters of the U.S. in Section 3.6.2.2 and Table 3.6-3 based on a jurisdictional and wetland delineation performed for the wind park study area.
O-1.2	The EIS states that: *Wetland delineations have not been performed at this time but will be completed prior to project construction within areas subject to disturbance*. Wetlands and riparian areas are extremely important and limited habitat types. The EIS should disclose if wetlands and riparian areas will be impacted. These areas should be located and any potential impacts disclosed for consideration prior to a final decision on the project.	Section 3.2.1.2 Section 3.6.2.2	In response to this comment, a wetland delineation was performed for the wind park study area and the results are described in the Final EIS at Section 3.6.2.2. Information about wetlands and riparian areas is also found at Section 3.2.1.2.
WATER RESOURCES – WATERS OF THE U.S.			
F-4.4	The commenter recommends consultation with the Army Corps of Engineers to determine if the proposed project requires a Section 404 permit.	Table 2.7-1 Section 3.6.2.2	Foresight met with Arizona Branch of USACE and its project Manager for Coconino County in November 2010. A Section 404 permit will be required for the project. USACE indicated that individual phases of development could be considered for separate permits, provided the phases could be deemed separate and complete. For the initial phase to be separate and complete, the application would include the initial

TABLE 10.2-3
COMMENT RESPONSES – RESOURCE ANALYSIS

Comment No.	Comment	Revisions at	Response
F-4.8	The commenter recommends that project alternatives be evaluated for compliance with Clean Water Act (CWA) Section 404(b)(1) guidelines for specifying disposal sites for dredged or fill materials. To demonstrate compliance, any permitted discharge must be based on the least environmentally damaging and most practicable alternative available to achieve the project purpose.		wind turbine area, the access and service road, collection system, transmission tie-line, and other related infrastructure in the initial phase area. Western will have responsibility for 404 compliance for its switchyard. The project anticipates projected impacts consistent with a nationwide permit for the initial phase and one or more subsequent phases, under current standards and under the pending standard updates scheduled for 2012. Under a nationwide permit a mitigation plan is not typically required. Project design is the least environmentally damaging and most practicable design available to achieve the project purpose. It takes into consideration the avoidance and minimization of impact to water resources. The project would comply with Section 404(b)(1), to the extent necessary, and the appropriate nationwide (or individual) permit will be in place prior to construction of the initial and subsequent phases. The Final EIS includes an additional RPM to ensure impacts would be minimized for jurisdictional waters of the U.S.
F-4.5	The commenter states that the results of a jurisdictional waters delineation by the USACE should be included in the Final EIS.		In response to this comment, an assessment of jurisdictional waters was prepared for the project study area in accordance with USACE Regulatory Guidance Letter 08-02. A preliminary jurisdictional determination was submitted to the USACE for the initial phase of the project in August 2011. The application included the initial wind turbine area, transmission tie-line, access road to the project, service roads, collection system, and step-up substation areas. The USACE determination is a separate process from the EIS analysis and the results may not be available at the time the EIS is published. A separate assessment for jurisdictional waters would be prepared for subsequent phases, once initiated.
F-4.6	The commenter is concerned that the impacts to aquatic resources, particularly in the wind park, may be underestimated. It recommends characterizing the functions of any aquatic features that could be affected by the project that are determined not to constitute waters of the United States.	Section 3.6.2.2 Table 3.6-3	In assessing potential impacts to aquatic resources, it is useful to know that the dominant terrain where disturbances would be made generally constitute rolling scrub-shrub plains. The run-off discharges from these plains accumulate into topographic depressions and generally direct flow to the Diablo and Grapevine canyons. As flow accumulates, upland depressions transition to more defined washes and scour of the surficial soil unit and underlying sandstone/limestone formations is present. Some of the formations show signs of an ordinary high water mark. Others do not. In response to this comment, a table was prepared for the Final EIS to depict estimated impacts to waters for the build-out area that would be

TABLE 10.2-3
COMMENT RESPONSES – RESOURCE ANALYSIS

Comment No.	Comment	Revisions at	Response
F-4.7	The commenter recommends the Final EIS include a table and clear narrative on the direct, indirect, secondary, and temporary impacts to waters, including wetlands, from infrastructure, particularly roads. It recommends quantifying the potential impacts to waters of the U.S. and discussing the steps that would be taken to avoid and minimize impacts, including mitigation plan as required by USACE and EPA regulations.		developed in the initial phase. The project anticipates projected impacts consistent with a nationwide permit for the initial phase and one or more subsequent phases, under current standards and under the pending standard updates scheduled for 2012. The RPM added to the Final EIS is based on a three-tiered approach to minimizing impacts. The tiered approach focuses on: 1) avoidance as the primary mechanism to limit impacts to jurisdictional waters; 2) where avoidance cannot be achieved, impacts are minimized through configuration of project to minimize the quantity of jurisdictional waters impacted; and 3) the implementation of engineering controls to further limit impacts where practicable. Engineering controls include culverts and low water crossings to maintain the flow conditions to downstream reaches and energy dissipation treatments where discharge estimates (for storms up to and including the 100-year return storm event) indicate erosive conditions may exist.
F-4.9	The commenter recommends the Final EIS provide additional information on the functions and locations of ephemeral washes in the project area and their hydrologic and biogeochemical roles in relationship to higher-order waters downstream.		
F-4.10	The commenter recommends that ground disturbance be minimized in ephemeral washes to reduce impacts. Potential damage that could result from the disturbance of flat-bottomed washes includes adequate capacity for flood control, energy dissipation, sediment movement, and high-value habitat for desert species.		
CUMULATIVE EFFECTS			
F-4.24	The commenter recommends that an illustration of the location of the Sunshine Wind Project be added to the cumulative impact analysis.	Figure 4.2-1	A map which shows the location of the Sunshine Wind Project is included, see Figure 4.2-1.
S-2.9	Golden eagles should be considered in the cumulative effects analysis.	Section 4.2.3.2	Based on this comment, the cumulative effects Section has been updated to address golden eagles. Additional text has been added to Section 4.2.3.2

10.3 COMMENT DOCUMENTS

Western received 15 comment documents (letters, emails, comment card, and hearing testimony) as of September 7, 2011. It received three additional agency documents as of September 13, 2010 and included these in its review. All materials are listed in the Comment Document Index (Index) below and reproduced here.

8/16/2010

Mr. Mike Dechter
Coconino National Forest
1824 South Thompson St.
Flagstaff, AZ

Dear Mr. Dechter,

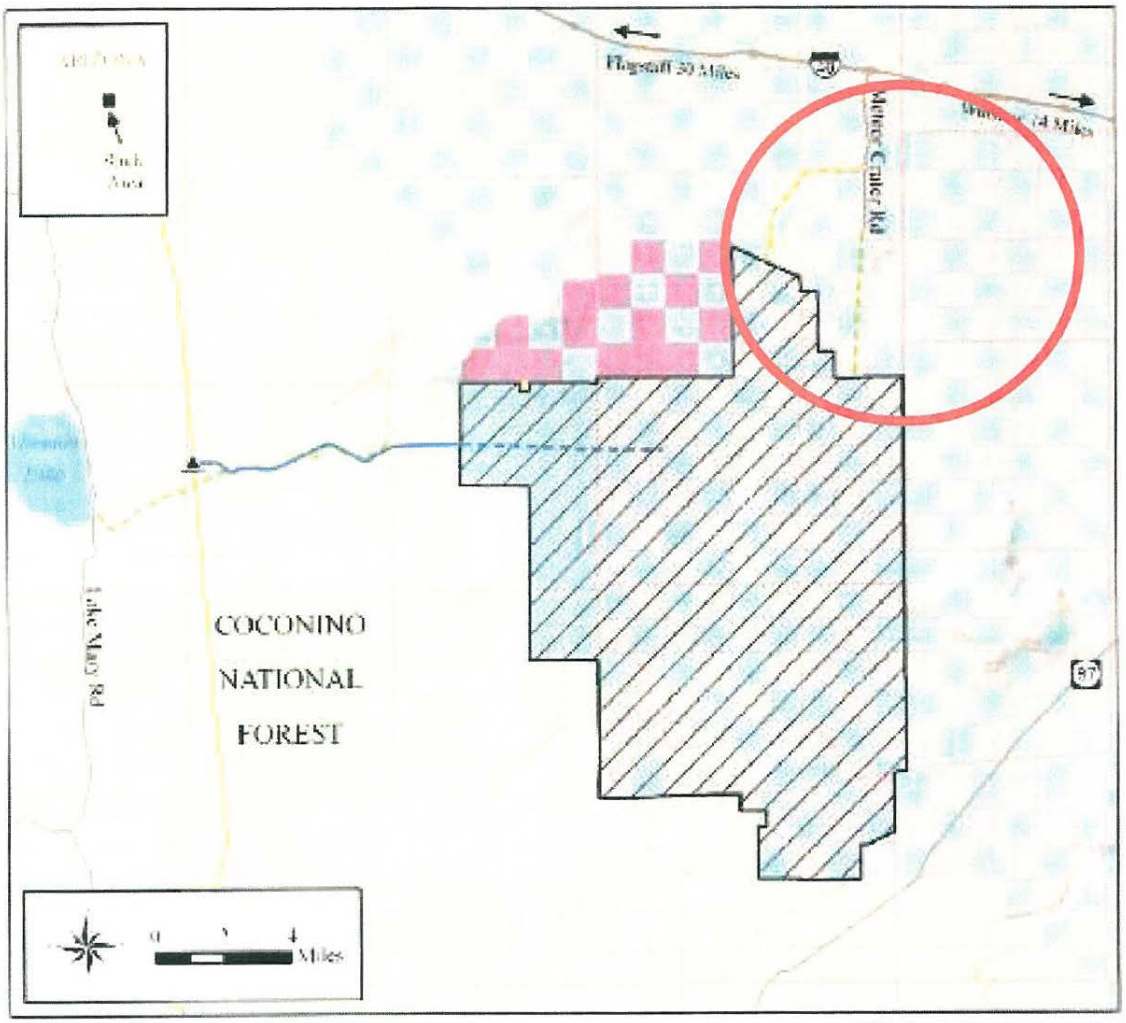
I have received the draft EIS for the Grapevine Canyon Wind Project. Upon reviewing the map, I noticed that part of the "study area" for the project included land that was within just two miles of Meteor Crater. This is of great concern to us.

B-1.1 I want to be clear that we have no objection to the project overall, but having wind turbines extending 250-300 feet over the rim of Meteor Crater within just two or three miles would be very distracting to our visitors. Meteor Crater is a National Natural Landmark, and people come from all over the world to visit our location. When viewing the Crater, our visitors are typically looking south or west. Having turbines on land that is within 5 miles south and west of Meteor Crater would be detrimental to our visitor's experience and could negatively affect our business.

I have included the map of the study area that shows the area of concern inside a red circle. If the turbines are located 5 miles or more from our location, our visitor's experience would not be greatly affected because the intrusion into the view shed would be much less. We would however strongly object to turbines being built at a distance less than 5 miles from Meteor Crater.

Sincerely,

Brad Andes, President
Meteor Crater Enterprises, Inc.



Legend

- Wind Park Study Area
- Proposed 345-kV Tie-line Alignment
- Proposed 345-kV Tie-line Alignment (Alignment to Be Determined)
- Proposed New Site Access Road
- Existing Site Access Road
- Proposed Interconnection Switchyard
- Existing Western 345-kV Transmission Lines
- Bureau of Land Management
- Forest Service
- Arizona Game and Fish Department
- Private
- State Trust
- Applicant's Proposed Project
- Grapevine Canyon Wind Project

FIGURE ES.1-1

TRANSCRIPT OF HEARING ON DRAFT EIS

GRAPEVINE CANYON WIND PROJECT
COCONINO COUNTY, ARIZONA

HOSTED BY: Western Area Power Administration
Lakeland, Colorado

Flagstaff, Arizona
Wednesday, August 18, 2010
7:00 - 9:00 p.m. (MST)

ORIGINAL

PERFORMANCE REPORTERS, INC.
121 East Birch Avenue, Suite 501
Flagstaff, Arizona 86001
TELEPHONE: (928) 213-1040

REPORTED BY:
JOHN A. DALSIN, RPR
AZ CCR NO. 50270

your address?

And you have five minutes, since we have only limited speakers here.

ORAL COMMENTS

MR. ROCK: Thank you very much.

My name is Ty Rock. The address is 30 Creek Rock Circle, Sedona, Arizona 86351.

I have various concerns, but I think the only two I will address tonight are access and decommission of the project, if that is the future of it.

On Page 53 of the EIS, there's a note there that indicates that during the construction and operation of the farm the permittee will possibly contact the Arizona Game and Fish Department ombudsman for closing of the area to hunting.

I can understand the closing the area for construction -- for the safety issue, of course -- but I am having difficulty with the operation phase of the project.

C-1.1

At the initial scoping meeting we had, we were assured that the public would have access to the entire project after the completion of the construction of the wind farm. I would like clarification on that.

The other issue I have is: At the

initial scoping meeting as well, we were told that there was going to be a decommission bond that would be required before any construction could be started on the project. And the EIS specifically indicates that that wasn't even addressed.

My concern, of course, is what we have in California, southern California, with the corporations that actually went broke, and we now have monuments to man's ingenuity standing up there with nothing to -- with no funds to decommission that facility. And so I'd like clarification on that as well. **C-1.2**

I think that probably will do it for this evening. I do have other concerns, but I believe I will put those in writing and send them in.

THE HEARING OFFICER: Thank you, Mr. Rock.

MR. ROCK: Thank you for the opportunity.

THE HEARING OFFICER: Are there any other persons that have signed up for comments to speak this evening?

(No audible response.)

THE HEARING OFFICER: We will hold comments open for the allotted time, from 7:00 until 9:00 o'clock, if other people want to speak.

There are representatives from the Forest Service, from Western Area Power, the contractors, the

Grapevine Canyon Wind Project

We Welcolme Your Comments

Your comments will help ensure we've addressed all relevant issues and alternatives in the Grapevine Canyon Wind Project Draft Environmental Impact Statement.

Please provide your comments by September 7, 2010 to:

Matt Blevins
Western Area Power Administration
P.O. Box 281213
Lakewood, Colorado 80228-8213
Telephone: 800-336-7288
FAX: 720962-7263
E-mail: grapevinewindeis@wapa.gov

OR

Mike Dechter
Coconino National Forest
1824 S. Thompson St.
Flagstaff Arizona 86001
E-mail: comments-southwestern-coconino@fs.fed.us

Receive future announcements about the Grapevine Canyon Wind Project

To have your name added to or removed from our mailing list for this project, check the appropriate box and complete the contact information below.

☐ Yes, add my name to the mailing list to receive future information. Please send me information by **regular mail** only.

☒ Yes, add my name to the mailing list to receive future information. Please send me information by **E-mail**.

☐ No, please remove my name from your mailing list.

C-2.1 • concerned about controlling access to park as mentioned on pg 155 of draft EIS. Locked gates on private parcels may preclude entrance into public lands.

C-2.2 • on page 63 of EIS - who is going to be "monitoring" access to wind park & how?

C-2.3 • page 54, paragraph 1, how does "mitigation" avoid adverse impacts to wildlife?

C-2.4 • page 56 of EIS - what purpose for post-construction monitoring of wildlife when construction is complete it will not be teardown because of adverse wildlife impacts

C-2.5 • page 93 of EIS - How is the mortality of any protected species of bird or raptors mitigated?

C-2.6 • page 30 of EIS discusses post-construction reclamation - what entity will oversee this phase of the project & will the public have input & what consequences will there be to the permitee for non-compliance?

C-2.7 • page 162 - Noise impact on wildlife - studies have shown that when project is completed at full build-out, Antelope may not re-enter the wind park at all. Research is inconclusive on this aspect of windfarms.

C-2.8 • page 182 suggests that if the project is decommissioned the facilities MAY be removed and the area of disturbance may be reclaimed. understanding of the word MAY is of concern.

C-2.9 • page 53 notes that the applicant would consult with AG&F ombudsman and file a petition with the AG&F Commission in the event an area requires a hunting closure during construction or operations. A closure for construction can be understood due to safety concerns but during operation of the wind park violates what the public has been told regarding access post construction.

C-2.10 • Does the wind park actually produce sufficient electrical energy to offset the buildings of components, construction of the wind park and completion of all legal requirements?

Meeting Attended: ☒ Flagstaff ☐ Mormon Lake

Your Name: Ty Rock **E-Mail:** redrock@verdeonline.com

Address 30 Creek Rock Circle **City** Sedona **State** Az **Zip** 86351

Please provide your name and contact information if you wish to receive future information on this project

-----Original Message-----
From: GrapeVineWindEIS GrapeVineWindEIS [mailto:GrapeVineWindEIS@wapa.gov]
Sent: Sunday, August 15, 2010 7:51 AM
To: Leah_Baker@blm.gov
Subject: Re: Fw: ENVIRONMENTAL REVIEW (ER) NEW POSTING NOTIFICATION: ER 10/652

Thank you for your input.

>>> <Leah Baker@blm.gov> 8/13/2010 3:51 PM >>>

F-1.1 In review of the proposed project described below, the BLM Phoenix District has no concerns with the plan. While the proposed plan is adjacent to a small parcel of BLM land, it poses no resource concern. Consultation was conducted with our Lands and Realty Specialist, Cultural Resource Specialist, and Wildlife Biologist.

Thank you.
. . . . . .
. .
Leah Baker
Planning & Environmental Coordinator
Bureau of Land Management
Phoenix District Office
623.580.5656

----- Forwarded by Chris Horyza/AZSO/AZ/BLM/DOI on 07/30/2010 10:17 AM -----

Brenda Hudgens-Williams/ WO/BLM/DOI	To	Chris Horyza/AZSO/AZ/BLM/DOI@BLM
07/30/2010 09:05 AM	cc	
	Subject	Fw: ENVIRONMENTAL REVIEW (ER) NEW POSTING NOTIFICATION: ER 10/652

1

This e-mail alerts you to an ER request from the Office of Environmental Policy and Compliance (OEPC). To access electronic ERs visit the OEPC Natural Resources Management Team website at:
http://www.doi.gov/oepc/nrm.html Under Quick Links select: Environmental Review Distributions (Bureau ER Notifications). For assistance, please contact the Natural Resources Management Team, at 202-208-5464.

[attachment "ER10-652 (DEIS- Grapevine Canyon Wind Project Project, Coconino County, AZ, .pdf).pdf" deleted by Leah Baker/PDO/AZ/BLM/DOI]

2

United States Department of the Interior
U.S. Fish and Wildlife Service
Arizona Ecological Services Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 Fax: (602) 242-2513

In reply refer to:

AESO/SE
22410-2010-TA-0346
20120-2009-FA-0075

September 8, 2010

Mr. Matt Blevins
Western Area Power Administration
Post Office Box 281213
Lakewood, Colorado 80228-8213

RE: Grapevine Canyon Wind Project Draft Environmental Impact Statement (DOE/EIS-0427)

Dear Mr. Blevins:

Thank you for your July 20, 2010, request for comments regarding the Grapevine Canyon Wind Project (GCWP) Draft Environmental Impact Statement (DEIS), Coconino County, Arizona. The document was prepared by the U.S. Department of Energy (DOE) and Western Area Power Administration (Western), in cooperation with the Coconino National Forest and the Arizona State Land Department (ASLD). The GCWP, proposed by Foresight Flying M, LLC, would include: 1) a wind energy generating facility up to 500 megawatts (MW); 2) a 345-kilovolt (kV) electrical transmission tie-in line; and 3) a 345-kV electrical interconnection switchyard that would be owned and operated by Western. The wind energy generation component would be located on private land and trust land administered by the ASLD. The electrical transmission tie-line would be located on private and State trust lands, as well as Federal lands administered by the Forest Service. The interconnection switchyard would be located entirely on National Forest System lands. The project is located 28 miles south and east of Flagstaff, Arizona, extending from the proposed wind park south of Meteor Crater to the proposed switchyard east of Mormon Lake.

The Fish and Wildlife Service (FWS) supports the development of nonpolluting, renewable, sustainable energy sources. However, wind energy developments do pose risks to wildlife and their habitats. Additional information on wind energy and wildlife issues can be found on our website, www.fws.gov/habitatconservation/wind.html, which includes the Interim Guidance on Avoiding and Minimizing Impacts to Wildlife from Wind Turbines (Guidelines). In addition to the interim guidelines, the Wind Turbine Guidelines Advisory Committee (Committee) was established in 2007 under the Federal Advisory Committee Act to provide advice and recommendations to the Secretary of the Interior (Secretary) on developing effective measures to avoid or minimize impacts to wildlife and their habitats related to land-based wind energy projects. On March 4, 2010, the Committee provided their final recommendations to the

Secretary. Though these voluntary recommendations have not been formally accepted by the Secretary, they do represent the most current synthesis of the state-of-our-knowledge regarding how to minimize the potential risk of wind energy projects to wildlife and habitats. The Arizona Game and Fish Department (AGFD) has also created Wind Energy Guidelines entitled *Guidelines for Reducing Impacts to Wildlife from Wind Energy Development in Arizona*. These guidelines can be found on their website at http://www.azgfd.gov/hgis/guidelines.aspx. We use all three documents to support our recommendations regarding the GCWP.

The comments provided below are organized according to the sections of the DEIS, with pages and paragraphs noted as appropriate.

Construction of Electrical Collection System and Communications System (page vi): The DEIS states that the electrical collection system and communications system would be co-located within the wind park study area, adjacent to the wind turbine generator (WTG) service roads to the extent possible. Up to approximately 241 miles of 34.5-kV collection lines and fiber optic cables are estimated if the project is built out to 500 MW. The majority of the lines would be underground. We support your efforts to put a majority of the power lines underground as this will reduce impacts to raptors at the site. We recommend that you follow these trenching guidelines from AGFD:

F-2.1

- Follow existing disturbed areas during installation to minimize habitat alterations. In low areas where the power line crosses drainages, the soil should be compacted to reduce the potential for erosion.
- Trenching and backfilling crews should be close together to minimize the amount of open trenches at any given time.
- Trenching should occur during the cooler months (October – March) when wildlife is less active. However, there may be exceptions (e.g., critical wintering areas) that should be assessed on a site-specific basis.
- Avoid leaving trenches open overnight.
- Where trenches cannot be back-filled immediately, escape ramps should be constructed at least every 45 meters. Escape ramps can be short lateral trenches or wooden planks sloping to the surface. The slope should be less than 45 degrees (1:1). Trenches that have been left open overnight should be inspected and animals removed prior to backfilling.

F-2.2

Meteorological Towers (page vii): The DEIS states that the existing temporary meteorological (met) towers will be maintained until construction is complete and that up to 16 long-term or permanent met towers would be used to monitor wind conditions at the site if the wind park is built out to 500 MW. These met towers would be free-standing structures, approximately 263-feet tall and constructed of steel lattice. We commend you for avoiding the use of guy-wires on these towers. The Committee's Final Recommendations submitted to the Secretary recommend avoiding the construction of permanent met towers at wind energy project sites. However, we understand that there may be a need for permanent met towers at the project site. Although it is unclear whether tubular or lattice towers reduce risk of collision, we recommend using tubular towers or the best available technology to reduce the ability of birds to perch and to reduce risk of collision. In addition, towers should employ only red, or dual red and white strobe,

strobe-like, or flashing lights, not steady burning lights, to meet Federal Aviation Administration requirements for visibility lighting of wind turbines, permanent met towers, and communication towers. Only a portion of the turbines within the wind project should be lighted, and all pilot warning lights should fire synchronously.

F-2.3 **Table ES.5-1, Biological Resources** (page xiv): This table lists two species, the Chiricahua leopard frog (*Lithobates chiricahuensis*) and the narrow-headed gartersnake (*Thamnophis rufipunctatus*), as species that have a low potential to occur within the area. These species do not occur within the project area or anywhere within dispersal distance of the project area (i.e., they have no potential to occur within the action area). Trust species for which we do have concern for adverse impacts include raptors, specifically the golden eagle (*Aquila chrysaetos*), migratory birds, and other FWS Birds of Conservation Concern. The closest amphibian of concern to the project area is the northern leopard frog (*Lithobates pipiens*). This sensitive species occurs on Anderson Mesa and likely has a greater chance of occurring within the project area over time than the herpetological species listed above.

F-2.4 **Table 1.3.1** (page 6): The table states that the Fish and Wildlife Service's (FWS) regulatory and/or authorization authority only includes Section 7, Endangered Species Act (ESA) Consultation. We recommend correcting this table to state that FWS authorizations include the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA), in addition to the ESA, as indicated.

F-2.5 The MBTA prohibits the taking, killing, possession, and transportation, (among other actions) of migratory birds, their eggs, parts, and nests, except when specifically permitted by regulations. While the MBTA has no provision for allowing unauthorized take, the FWS realizes that some birds may be killed during wind operations even if all known reasonable and effective measures to protect birds are used. The FWS Office of Law Enforcement carries out its mission to protect migratory birds through investigations and enforcement, as well as by fostering relationships with individuals, companies, and industries that have taken effective steps to avoid take of migratory birds, and by encouraging others to implement measures to avoid take of migratory birds. It is not possible to absolve individuals, companies, or agencies from liability even if they implement bird mortality avoidance or other similar protective measures. However, the Office of Law Enforcement focuses its resources on investigating and prosecuting individuals and companies that take migratory birds without identifying and implementing all reasonable, prudent, and effective measures to avoid that take. Companies are encouraged to work closely with FWS biologists to identify available protective measures when developing project plans and/or avian protection plans, and to implement those measures prior to or during construction or other similar activities.

F-2.6 **2.2.1.3, Operation and Maintenance of the Wind Park,** *Operating Schedule* (page 27): The DEIS states that the GCWP would operate 24 hours per day, 365 days per year. We request that you consider operational flexibility to allow particular turbines to be turned off during certain times to avoid negative impacts on wildlife, particularly migratory birds or bats. Curtailment strategies, such as reducing cut-in speeds, may be another effective mitigation strategy to reduce bat fatalities. We recommend that the operating schedule, its potential effects, and possible

minimization measures be included in the Avian Bat Protection Plan (ABPP) currently under development.

F-2.7 ***Threatened, Endangered, and Sensitive Wildlife Species***: Wind Park (pages 89-90): This section discusses two species: the threatened Chiricahua leopard frog and the candidate narrow-headed garter snake. As we stated earlier, neither of these species is likely to be impacted by the proposed wind project. However, there are trust species missing from this section that we believe should be addressed more fully within the DEIS and not left to discussion in reports in the appendices. We recommend that the final EIS include information regarding potential impacts to the following species:

F-2.8 **Golden eagle**: The population status of golden eagles breeding in the Southwest and other western states is currently uncertain; however, many experts believe the species is declining. Two "inactive" golden eagle nests were documented during raptor nest surveys (aerial survey in April 2008 and a ground-based raptor nest survey in June 2008). However, this information is based upon one year of surveys and with two potential golden eagle nests in the center of the project area it is possible that golden eagles did not use the territory in 2008 or attempted nesting earlier and failed. Nesting by golden eagles tends to be cyclic in the western U.S., and during some years breeding pairs may occupy territories but not lay eggs. Even though the pre-construction survey data suggests that avian mortality overall would be average (compared to other facilities), the conclusion does not take into account the species-specific probability of mortality, which is very high for golden eagles. Placement of turbines in or near prairie dog towns (within four miles, based upon foraging distances in published literature), should be avoided until additional surveys (e.g., intensive observation, telemetry, etc.) can be conducted. At the very least, we recommend an additional year of pre-construction raptor surveys in order to better evaluate the risk to golden eagles from the proposed project.

The golden eagle is protected under the BGEPA. The FWS finalized permit regulations under the BGEPA for the take of bald and golden eagles on a limited basis, provided we determine that the take is compatible with preservation of the eagle and cannot be practicably avoided. For the purposes of these regulations, "preservation of the eagle" means "consistent with the goal of stable or increasing breeding populations." Under the section on programmatic permits, wind-power facilities are discussed. On page 46842, the final rule states that if advanced conservation practices (ACPs) can be developed to significantly reduce take, the operator of a wind-power facility may qualify for a programmatic take permit. ACPs refer to scientifically-supportable measures that are approved by the FWS and represent the best-available techniques to reduce eagle disturbance and/or on-going mortalities to a level where remaining take is unavoidable. Though we have not received your ABPP yet, at our July 12, 2010, meeting regarding this project, we were told we would be provided an opportunity to evaluate the ABPP. We look forward to working with project personnel in evaluating the ABPP.

F-2.9 **FWS Birds of Conservation Concern (BCC)**: The DEIS does not specifically discuss these species, which are demonstrating population declines and may be considered for candidate status under the ESA without concerted conservation efforts. The project area

lies at the edge of Bird Conservation Regions 16 and 34, and regional and national lists are posted at http://library.fws.gov/bird_publications/bcc2008.pdf. Though we recommend a thorough review of these lists, they do change every few years, and focus should remain on potential effects to all migratory birds that occur in the U.S. and are protected under MBTA. Specifically, the pinyon jay may be at relatively high-risk of collision with project infrastructure, and the ABPP may want to specifically address means to minimize impacts to this BCC.

F-2.9 Abundance of birds, particularly passerines, was substantial at point count plot nine (average of 36 birds/20 minute survey) and it is possible that turbine placement in this area could result in high levels of mortality. We recommend that in the ABPP, the vegetation, topography, and other site characteristics be scrutinized to determine why avian abundance is higher at this site and possibly sites with similar characteristics that were not surveyed. WTG siting should be avoided until additional surveys indicate whether high levels of bird mortality are likely. In addition, we also noted that displacement impacts to birds are not addressed in the DEIS. We recommend including in the ABPP a review of the potential displacement impacts and habitat disturbance effects that may result to migratory birds and the BCC within the project area and how the proposed construction and site management best management practices may reduce these effects.

F-2.10 In our review of the proposed action, we also noted that no nocturnal bird surveys were conducted. Additionally, point count surveys were conducted during mid-day, which is optimum timing for many species of diurnal raptors, but not a good time to detect many passerines. We recommend that this information is acknowledged in the ABPP and final DEIS. We also recommend that burrowing owl surveys be conducted in the early morning (preferred) or late evening along prairie dog towns, roads, and trails.

F-2.11 **Other raptors**: Relatively high raptor abundance was documented by WEST, Inc. near prairie dog towns within the proposed project area. Based upon the moderate level of raptor abundance (mean 0.67 observed/20-minute survey), WEST, Inc. predicted 0.10 raptors killed/MW/year. At 500 MW, about 50 raptors could be killed annually as a result of the GCWP (although based on 90% confidence intervals, 0 to 175 raptors could be killed annually). The greatest raptor abundance noted among 24 point count plots occurred at three plots that were within or adjacent to prairie dog towns. Raptors, especially golden eagles and red-tailed hawks, will be vulnerable to collision with any turbines placed in these areas. This should be addressed in the ABPP.

F-2.12 **Table 2.7.1** (page 55): We recognize that a biological inventory and one year of pre-construction data have been completed for Site A. However, we strongly recommend that additional work be completed to appropriately assess the risk of avian and bat impacts from the GCWP. We recommend that the project proponents consider GCWP a Category 3 project site per AGFD's guidelines. Category 3 sites have high or uncertain potential for wildlife impacts involving birds and/or bats, special status species, or other species. Characteristics that indicate high potential wildlife impacts at the GCWP site include the number of proposed turbines and project size, special status species occurring on or adjacent to the site (e.g., golden eagles), and

the presence of current and historic prairie dog colonies that may concentrate raptor activity. As a Category 3 site, the following would need to be completed prior to construction:

- Complete biological inventories for Sites B and C prior to construction in Site A;
- Collect at least two years of pre-construction bird and bat data, with special attention to characterizing seasonal and spatial variability in species use, prior to construction in Site A; and,
- Design a post-construction monitoring plan to assess the impacts of operation on wildlife for at least three years following construction.

F-2.12

As you know, a goal of the pre- and post-construction studies is to inform the turbine arrangement and operating schedules for wind projects. Negative impacts to species can be minimized with tower configuration that uses clustering to minimize gaps and that incorporates non-bladed pylons at string edges. In addition, turbines sited on mesa rims should be placed at least 50 meters (closest rotor) from the rim edge to minimize impacts to raptors.

F-2.13

Table 2.7.1 (page 56): We strongly recommend that you complete post-construction bird and bat fatality monitoring for at least two years. The DEIS states that only one year of post-construction monitoring would be completed. In addition, we recommend that all bats collected during mortality searches are offered as a donation to the to the American Museum of Natural History for their ongoing North American Bat Samples for Genomic and Stable Isotope Studies, http://research.amnh.org/vz/mammalogy/batdonation.

F-2.14

Finally, we request that you provide us with a copy of all final decision documents associated with this project. Final decision documents include the issued permit or license, final environmental impact statement, record of decision, integrated natural resource management plan, or similar document. These decision documents advise us of the final specifications of the proposed project and indicate which of the measures recommended for the conservation of fish and wildlife resources were implemented.

The FWS's coordination, including this letter, is provided as technical assistance. Ultimately it is the responsibility of those involved with the planning, design, construction, operation and maintenance of the proposed project to complete a risk assessment, determine the likelihood of taking federally-protected species, and pursue the appropriate course of action. By taking extra effort and expense initially (during design and construction phases) to minimize your project's impacts on wildlife and their habitats, you can help to ensure that your project will meet the environmental expectations of an increasingly concerned public for many years into the future. We will assist you in this process and appreciate the many efforts included in the DEIS that will minimize wildlife impacts from this project. We appreciate the opportunity to review DEIS and we look forward to evaluating the ABPP.

We also encourage you to coordinate the review of this project with the AGFD. In all future correspondence on this project, please refer to consultation number 22410-2010-TA-0346.

Mr. Matt Blevins 7

Should you require further assistance or if you have any questions, please contact Shaula Hedwall (x103) or Brenda Smith (x101) of our Flagstaff Suboffice at (928) 226-0614.

Sincerely,

Steven L. Spangle
Field Supervisor

cc: (electronic)
IPM Coordinator and NEPA, Fish and Wildlife Service, Kellyville, OK (Attn: Dean Heckathorn)
Environmental Protection Specialist, Division of Habitat and Resource Conservation, Fish and Wildlife Service, Arlington, VA (Attn: Stephanie Nash)
Alternative Energy Coordinator, Regional Office, Fish and Wildlife Service, Albuquerque, NM (Attn: Laila Lienesch)
Division of Migratory Birds, Regional Office, Fish and Wildlife Service, Albuquerque, NM (Attn: Robert Murphy)
Nicholas Chavez, Special Agent in Charge, Regional Office, Fish and Wildlife Service, Albuquerque, NM
Assistant Field Supervisor, Fish and Wildlife Service, Flagstaff, AZ
Fish and Wildlife Biologist, Fish and Wildlife Service, Phoenix, AZ (Attn: Greg Beatty)
Environmental Protection Agency, San Francisco, CA (Attn: Ann McPherson)
Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ
Regional Supervisor, Arizona Game and Fish Department, Flagstaff, AZ
Forest Supervisor, Coconino National Forest, Flagstaff, AZ
Forest Biologist, Coconino National Forest, Flagstaff, AZ

W:\Shaula Hedwall\DEIS Grapevine Canyon Wind Project 9-3-10.docx: jkey

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Pacific Southwest Region
1111 Jackson Street, Suite 520
Oakland, California 94607

IN REPLY REFER TO:
ER# 10/652

Electronically Filed

10 September 2010

Mr. Matt Blevins
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228-8213
Telephone: (800) 336-7288
Fax: (720) 962-7263
E-mail: GrapevineWindEIS@wapa.gov

Subject: Draft Environmental Impact Statement of the Western Area Power Administration's Grapevine Canyon Wind Project, Coconino County, AZ

Dear Mr. Blevins:

Department of the Interior has received and reviewed the subject document and has the following comments to offer.

General Comments:

Chapter 3: Affected Environment and Environmental Consequences, Section 3.2 Biological Resources, pages 84- 106:

F-3.1 The public would benefit from inclusion of a discussion of available scientific information regarding impacts of wind energy projects on bird and bat species. Based on that information, it would help to include an assessment of mitigation options to avoid or significantly reduce impacts on these species from proposed project. Final EIS could include information from Wyoming wind-turbine data developed by U.S. Geological Survey (O'Donnell and Fancher, 2010) for comparison purposes with proposed project. These data help evaluate effects of wind energy development on seasonal habitat used by greater sage-grouse. Spatially explicit seasonal distribution models of sage-grouse in Wyoming will provide resource managers with tools for conservation planning and assessing effect of disturbance resulting from wind energy development on sage-grouse populations.

F-3.2 Although considerable progress has been made in recent years toward better understanding impacts and proposed mitigation options for bat species, bats of certain species are dying at wind

F-3.2 turbines in unprecedented numbers, and causes of bat fatalities at turbines remain unclear. It would, therefore, be beneficial for the final EIS to include the synthesis of hypothesized causes of bat fatalities at wind turbines from study by Cryan and Barclay (2009). It would also benefit the public to include scientific information from other studies that suggest that mating behavior has been identified as a possible cause of bat fatalities at wind turbines (Cryan, 2008) and that certain species of bats are particularly susceptible to mortality from wind turbines (Cryan, 2006).

Thank you for the opportunity to review and comment on the DEIS. If you have any questions concerning our comments, please contact Gary LeCain, USGS Coordinator for Environmental Document Reviews, at (303) 236-5050 (x229) or at gdlecain@usgs.gov

Thank you for the opportunity to review this project.

Sincerely,

Patricia Sanderson Port
Regional Environmental Officer

cc:
Director, OEPC
DOE, WAPA
Senior, advisor USGS

REFERENCES:

Cryan, P.M. and R.M.R. Barclay. 2009. Causes of bat fatalities at wind turbines: Hypotheses and predictions. Journal of Mammalogy 90(6): 1330-1340.

Cryan, P.M. 2008. Mating behavior as a possible cause of bat fatalities at wind turbines. Journal of Wildlife Management 72(3): 845-849.

Cryan, P. 2006. Bat fatalities at wind turbines: Investigating the causes and consequences. http://www.fort.usgs.gov/products/publications/pub_abstract.asp?PubID=22200/.

O'Donnell, M.S., and Fancher, T.S., 2010, Spatial mapping and attribution of Wyoming wind turbines: U.S. Geological Survey Data Series DS 524, http://pubs.usgs.gov/ds/524, or http://www.fort.usgs.gov/Products/Publications/pub_abstract.asp?PubID=22954.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901
SEP 13 2010

Matt Blevins
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228-8213

Subject: Draft Environmental Impact Statement for Grapevine Canyon Wind Project, Coconino County, Arizona [CEQ# 20100264]

Dear Mr. Blevins:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the Grapevine Canyon Wind Project, Coconino County, Arizona. Our comments are provided pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

EPA supports increasing the development of renewable energy resources, as recommended in the National Energy Policy Act of 2005, in an expeditious and well planned manner. Using renewable energy resources such as wind power can help the nation meet its energy requirements while reducing greenhouse gas emissions. Given the large number of renewable energy project applications currently under consideration, particularly in the Desert Southwest, we believe it is imperative that project applicants coordinate early with federal agencies and stakeholders on site selection and project design in order to facilitate timely environmental reviews. We encourage federal agencies to apply land management and regulatory authorities in a manner that will promote a long-term sustainable balance between available energy supplies, energy demand, and protection of ecosystems and human health.

Foresight Flying M, LLC (Applicant) has submitted an application to the Western Area Power Administration (Western) to interconnect the Grapevine Canyon Wind Project (Proposed Project) to Western's power transmission system. The Proposed Project includes: a wind generating facility (wind park) up to 500 megawatts (MW); a 15-mile 345-kilovolt (kV) electrical transmission tie-line; and an interconnection switchyard.

Based on our review of the subject DEIS, we have rated the document as *Environmental Concerns – Insufficient Information* (EC-2). Please see the enclosed "Summary of Rating Definitions." An "EC" signifies that EPA's review of the DEIS has identified environmental impacts that should be avoided in order to provide adequate protection for the environment. A "2" rating signifies that the DEIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment.

In the enclosed detailed comments, we provide specific recommendations regarding

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analyses and documentation to assist in assessing potential significant impacts from the proposed Project. EPA is concerned about potential impacts on aquatic resources, bats, and avian species, particularly the bald eagle and golden eagle; the alternatives analysis; and the discussion of air quality and climate change. We are also concerned by the lack of details provided in the DEIS about the design and layout of the proposed wind park. Although the wind park would be located on private and State trust lands, it appears to be dependent on the federal permitting of the transmission line and the construction and operation of the electrical switchyard on Federal lands. Thus, the impacts of constructing and operating the wind park are considered relevant to Western's approval or denial of the interconnection request. Without more detailed information on the size, location, and number of wind turbine generators, it is difficult to evaluate the full extent of impacts of Western's action.

F-4.18 We recommend that the Final Environmental Impact Statement (FEIS) include more detailed information on the design and layout of the proposed wind park. In addition, we recommend that the Applicant consult with the U.S. Corps of Engineers to determine if a Clean Water Act Section 404(b) permit will be required. The FEIS should quantify the potential impacts to waters of the U.S. and discuss the steps that would be taken to avoid and minimize such impacts. Regarding our concerns about avian and bat species, we recommend that the Applicant work closely with the U.S. Fish and Wildlife Service in the development of the Avian and Bat Protection Plan. The FEIS should clarify how the Applicant will comply with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. We also recommend that the Applicant complete pre-construction surveys of wildlife in all areas of the proposed wind park prior to construction, and conduct post-construction surveys of raptors for at least two years. Finally, we recommend that the Applicant utilize the most effective techniques and technology (e.g. bird and bat radar systems, feathering of blades, and shut down of turbines during strategic intervals to reduce take) to ensure maximum avoidance of bird and bat strikes.

EPA appreciates Western's coordination to date and the opportunity to provide input on this Project. If you have any questions, please contact me at (415) 972-3521, or contact Ann McPherson, the lead reviewer for this project. Ann can be reached at (415) 972-3545 or mcpherson.ann@epa.gov.

Sincerely,

Kathleen M. Goforth, Manager
Environmental Review Office

Enclosures: EPA Summary of Rating Definitions
EPA Detailed Comments

cc: Sally McGuire, U.S. Army Corps of Engineers
Shaula Hedwall, U.S. Fish and Wildlife Service
Reuben Ojeda, Arizona State Land Department
Mike Dunbar, Coconino National Forest

Chairman Leroy Shingoitewa, Hopi Tribe
Chairman Joe Shirley, Jr., Navajo Nation
Governor Norman Cooeyate, Zuni Pueblo

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

U.S. EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) FOR THE GRAPEVINE CANYON WIND PROJECT, COCONINO COUNTY, ARIZONA, SEPTEMBER 13, 2010

Foresight Flying M, LLC (Applicant) has submitted an application to the Western Area Power Administration (Western) to interconnect the Grapevine Canyon Wind Project (Proposed Project) to Western's power transmission system. The Proposed Project includes: a wind generating facility (wind park) up to 500 megawatts (MW); a 15-mile 345-kilovolt (kV) electrical transmission tie-line; and an interconnection switchyard. The wind park study area would encompass almost 100,000 acres of private land and State trust lands administered by the Arizona State Land Department. The electrical transmission tie-line would extend across 8.5 miles of Forest Service lands and up to 6.5 miles of State trust and private lands. The interconnection switchyard would be located on a 15-acre parcel on Forest Service land. The Forest Service will approve or deny the special use permit authorizing a right-of-way (ROW) for that portion of the 345-kV tie-line crossing Forest Service lands as well as the 15-acre parcel for the switchyard. Western will approve or deny the interconnection request. The project is located about 28 miles southeast of Flagstaff, Arizona in Coconino County.

Detailed Description of the Proposed Project

EPA is concerned that the DEIS provides an insufficient level of detail about the size, layout, and design of the proposed wind park. The DEIS states that the wind park would likely be built in two or more phases, and that power sale contracts would determine the size and number of turbines per phase, timing of wind park phases, and wind park layout and design (pg. 13). According to the DEIS, testing is not complete and these decisions will be made at a later date. Depending on the rating of the wind turbine generators (WTGs) (1.5 MW to 3.0 MW), the number of WTGs could range from 166 to 333. The extent of impacts on resources is dependent on the size, location, and number of WTGs. Without this type of information, it is difficult, if not impossible, to fully evaluate the impacts of the proposed project on specific resources.

F-4.1 *Recommendation:*
Provide additional information on the proposed wind park, including the layout and design of the project, within the FEIS so that environmental impacts may be more fully evaluated. If this information is not available, we recommend either not proceeding with publication of the FEIS until it can be included, or evaluating additional alternatives in the FEIS that encompass the full range of potential layouts and sizes and numbers of WTGs.

Alternatives Analysis

The Council on Environmental Quality (CEQ) Regulations for implementing NEPA (40 CFR, Parts 1500-1508) state that the alternatives section of an EIS should "rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly describe the reasons for their having been eliminated" (40 CFR, part 1502.14). A robust range of alternatives will identify environmentally sensitive areas or areas with potential use conflicts and include options for avoiding significant environmental impacts.

The CEQ regulations also state that this "includes alternatives not within the jurisdiction of the lead agency" (40 CFR, part 1502.14).

The DEIS presents two action alternatives and a no-action alternative. The Proposed Project includes the wind park (up to 500 MW), 345-kV transmission tie-line, and a 345-kV electrical interconnection switchyard. The second alternative, identified by the Forest Service, identifies an alternate corridor for the transmission tie-line to address potential effects to visual resources, with the wind park and the switchyard located in the same places (pg. 44). According to the DEIS, several alternatives related to the transmission line and switchyard were considered but not carried forward. Alternatives addressing the location of the proposed wind park were not considered since decisions and actions related to the proposed wind park are outside of the scope of decisions that will be made by Western and the Forest Service and no alternative locations were proposed during the EIS scoping process (pg. 51). As previously noted, however, a robust alternatives analysis includes reasonable alternatives not within the jurisdiction of the lead agency (40 CFR, part 1502.14).

F-4.2 *Recommendation:*
Expand the alternatives analysis in the Final Environmental Impact Statement (FEIS) to include either alternate site locations (to the proposed wind park) or on-site alternatives that demonstrate a reduction of impacts.

Water Resources

Clean Water Act Section 404

EPA is concerned about the potential adverse impact to aquatic resources that may result from the Proposed Project. According to the DEIS, there are numerous named and unnamed drainages and ephemeral streams found in the wind park study area (pg. 131). Under Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (Corps) has authority to regulate the discharge of dredged and fill material into waters of the United States (WUS, jurisdictional waters). WUS include non-navigable tributaries that typically flow year-round or have flow at least seasonally (pg. 131). Wetlands, which are special aquatic sites, as well as drainages and ephemeral washes, can also be jurisdictional. Activities resulting in dredging or filling of jurisdictional waters would require authorization under a CWA Section 404 Permit.

According to the DEIS, field review of the water resources evaluation area and a review of National Wetlands Inventory (NWI) maps did not identify wetlands in the vicinity of the proposed project components (pg. 131). As described in the Grapevine Canyon Wind Project Site Characterization Report, however, woody wetlands are present in the Grapevine Canyon Wind Resource Area (GCWRA; 375.11 acres) and the Evaluation Area (524 acres) (Appendix D.1, pg. 10). Based on the NWI data, the GCWRA is includes 30.86 acres of wetland habitat and the Evaluation Area includes of 123.53 acres of wetland habitat (Appendix D.1, pg. 10). Thus, the information presented in the DEIS appears to contradict that which is presented in the Grapevine Canyon Wind Project Site Characterization Report.

F-4.3 *Recommendation:*
Clarify whether wetlands are present in the GCWRA and the Evaluation Area.

The DEIS states that, if required, the Applicant would apply for a Nationwide Permit No. 12 for utility line activities administered under Section 404 of the CWA. In addition, potential impacts to WUS or wetlands identified by the Forest Service that result from construction, operation, and maintenance of the proposed wind park and transmission tie-line would be minimized through implementing the Resource Protection Measures (RPMs) listed in Section 2.7 (pg. 131). We note, however, that in the absence of a formal jurisdictional determination verified by the Corps, it is difficult to discern the extent of impacts to waters based on information provided in the DEIS. EPA is concerned that the impacts to aquatic resources, particularly in the wind park, may be underestimated. F-4.6

The DEIS states that the primary access road would require a crossing of Canyon Diablo, with an anticipated span of up to 80 feet. In addition to Canyon Diablo, the access road is expected to cross up to five smaller ephemeral washes (pg. 21). Culverts would likely be placed within these washes at crossings. Once primary access has been established, service roads to each wind turbine generator site would be constructed. Up to 143 miles of service roads would be needed if the wind park is fully built out to 500 MW (pg. 21). Proposed project construction associated with access roads and transmission line development could directly affect (via temporary or permanent fill) and indirectly affect drainages and ephemeral washes within the Proposed Project area. The document states that access roads will be designed to incorporate culverts for crossing waters on the project site, but there is no information on the extent of impact. Road crossings within WUS may result in the reduction of the physical extent of waters, adverse modification of stream hydrology and sediment transport, and adverse effects to habitat connectivity and wildlife movement.

If it is determined that there are jurisdictional waters within the project area, a CWA Section 404 permit from the Corps will be necessary for any discharges of dredged or fill material into these waters. If a Section 404 permit is required, EPA will review the project for compliance with the Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA (Guidelines). Pursuant to the Guidelines, any permitted discharge into WUS must be the Least Environmentally Damaging Practicable Alternative (LEDPA) available to achieve the project purpose. No discharge can be permitted if it will cause or contribute to significant degradation of WUS. Based on the information available within the DEIS, the applicant has not demonstrated compliance with the Guidelines. F-4.8

If impacts to aquatic resources cannot be avoided, alternatives that minimize impacts must be fully considered. With projects such as transmission lines and wind parks, there are opportunities to avoid and minimize impacts to waters through sensitive design criteria such as the placement of towers/wind turbines out of waters, including drainages and washes, and a reduction of the construction footprint. Additional avoidance and minimization alternatives should be explored, such as bridging and the use of at-grade crossings or Arizona crossings. Pursuant to the Guidelines, the applicant must mitigate for unavoidable impacts to WUS. EPA offers the following recommendations to help facilitate compliance of the project with the Section 404 Guidelines:

Recommendations:

F-4.4 **F-4.5** The project Applicant should consult with the Corps to determine if the proposed project requires a Section 404 permit under the CWA, and this information should be disclosed in the FEIS. The results of a jurisdictional delineation by the Corps should also be included in the FEIS.

F-4.7 The FEIS should include a table and clear narrative on the direct, indirect/secondary and temporary impacts to waters, including wetlands. Quantify, in the FEIS, potential impacts to WUS and discuss the steps that would be taken to avoid and minimize impacts. Include a mitigation plan for unavoidable impacts to WUS, as required by Corps and EPA regulations, and describe how the Proposed Project would meet 404 (b)(1) Guidelines, which require that projects first avoid, then minimize, and, finally, mitigate any impacts to WUS, including wetlands and other special aquatic sites.

F-4.4

F-4.8 Include an evaluation of the project alternatives with regard to compliance with the 404(b)(1) Guidelines and authorization of the LEDPA, if applicable. The location of bald and golden eagle home ranges and migration corridors in the vicinity of the project, as well as the need to avoid the take of eagles, should be considered during development of the LEDPA.

F-4.6 Characterize the functions of any aquatic features that could be affected by the project that are determined not to constitute WUS, and discuss potential mitigation.

Ephemeral Washes

The FEIS should include additional detailed information on the functions and locations of ephemeral washes. Natural ephemeral washes perform a diversity of hydrologic and biogeochemical functions that directly affect the integrity and functional condition of higher-order waters downstream. Healthy ephemeral waters with characteristic plant communities control rates of sediment deposition and dissipate the energy associated with flood flows. Ephemeral washes also provide habitat for breeding, shelter, foraging, and movement of wildlife. Many plant populations are dependent on these aquatic ecosystems and adapted to their unique conditions. Potential damage that could result from disturbance of flat-bottomed washes includes alterations to the hydrological functions that natural channels provide in arid ecosystems: adequate capacity for flood control, energy dissipation, and sediment movement, as well as impacts to valuable habitat for desert species.

F-4.10

Recommendations:

F-4.9 Provide, in the FEIS, additional information on the functions and locations of ephemeral washes in the project area and their hydrologic and biogeochemical roles in relationship to higher-order waters downstream.

F-4.10 Minimize ground disturbance, thus reducing impacts to species habitat and fill of ephemeral washes.

Threatened, Endangered, and Sensitive Wildlife Species

EPA is concerned about potential impacts to sensitive wildlife species, particularly avian and bat species. The wind park lies within the Intermountain West region of the American Pacific Flyway, one of five primary migratory routes for waterbirds, shorebirds, songbirds, and raptors (pg. 94). According to the DEIS, seventeen diurnal raptor species and eight owl species have the potential to occur within the biological resources evaluation area (pg. 94). In addition, thirty species of bat are known to occur in Arizona, with 20 species having an approximate range that includes the project area (pg. 95). The most likely roosting habitat for bats is within canyons, caves, crevices, and rock outcrops, features that are present in the wind park project area. During baseline studies conducted at a subsection of the proposed wind park (Study Area A), ten raptor species were observed using the area, including the bald eagle and golden eagle. In addition, two inactive golden eagle nests were observed within Grapevine Canyon (pg. 94).

As noted in the DEIS, all raptor and owl species are protected under the Migratory Bird Treaty Act (MBTA). The golden eagle and bald eagle also receive protection under the Bald and Golden Eagle Protection Act (BGEPA). In September 2009, the U.S. Fish and Wildlife Service (FWS) finalized permit regulations[1] under the BGEPA for the take of bald and golden eagles on a limited basis, provided that the take is compatible with preservation of the eagle and cannot be practicably avoided. The final rule states that if advanced conservation practices (ACPs) can be developed to significantly reduce take, the operator of a wind-power facility may qualify for a programmatic take permit. Most permits under the new regulations would authorize *disturbance*, rather than take.[2] Given the large home ranges of golden eagles and proximity of nests in the area, some birds are likely to be killed during operations even with protective measures. According to the DEIS, a regression analysis was used to predict raptor mortality at Study Area A. The analysis results predict an estimated fatality rate of 10 raptors per year per 100 MW of wind energy (pg. 102) or up to 50 raptors per year at full build out (500 MW). The DEIS does not adequately address the acquisition of permits associated with disturbance or take of bald and golden eagles.

F-4.12

Recommendations:

F-4.11 Identify, in the FEIS, specific measures to reduce impacts to eagles. Clarify how the proposed project will comply with the MBTA and BGEPA.

F-4.12 Discuss in the FEIS the applicability of the recently finalized FWS permit regulations (50 CFR Parts 13 and 22) to the proposed project. Elaborate on the process and likelihood of obtaining a permit via these regulations.

[1] See Eagle Permits, 50 CFR parts 13 and 22, issued Sept. 11, 2009. See internet address: http://www.fws.gov/migratorybirds/CurrentBirdIssues/BaldEagle/Final%20Disturbance%20Rule%209%20Sept%202009.pdf

[2] See U.S. Fish Wildlife Service Migratory Bird Management Information: Eagle Rule Questions and Answers. http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BaldEagle/QAs%20for%20Eagle%20Rule.final.10.6.09.pdf

F-4.13 Commit, in the FEIS and Record of Decision (ROD), to additional data collection and analysis to identify areas that are important to bald and golden eagles to ensure proper siting and avoid take of these species.

F-4.19 If alternatives cannot be developed that avoid the take of eagles, develop an operational monitoring and adaptive management plan to address this issue, and include it in the FEIS and ROD.

Table 2.7-1 summarizes the RPMs that would be applied to the proposed project components. The RPMs state that additional bird and bat data collection *may* occur for portions of the wind park study area not already surveyed (pg. 56). Baseline biological studies were conducted at Study Area A (subsection of the proposed wind park) in 2007 and 2008, but have not been conducted over the rest of the wind park. In addition, after the wind park begins operation, the Applicant would conduct a formal post-construction monitoring study (1 year) designed to estimate avian and bat mortality (pg. 56). If the first year's monitoring suggests an extraordinary fatality rate, or where weather conditions are highly variable to affect migration timing and testing, additional post-construction monitoring would occur. The RPMs state that an Avian and Bat Protection Plan would be developed prior to wind park construction to help ensure the wind park is operated in an environmentally sustainable manner to minimize potential impacts to birds, bats, and other wildlife and their habitat (pg. 56).

The US Fish and Wildlife Service recently published a set of guidelines and recommendations[3] on how to avoid and minimize impacts of land-based wind farms on wildlife and habitat (March 2010). The document was prepared by the Wind Turbine Guidelines Advisory Committee and contains both policy recommendations and recommended voluntary guidelines for siting and operating wind energy projects in order to avoid or minimize potential impacts to wildlife and habitat. The Committee's Guidelines utilize a "tiered approach" to assess potential impacts to wildlife and their habitats. The five tiers include: 1) preliminary evaluation or screening of sites; 2) site characterization; 3) field studies to document site wildlife conditions and predict project impacts; 4) post-construction fatality studies; and 5) other post-construction studies. The Guidelines provide a consistent methodology for conducting pre-construction risk assessments and post-construction impact assessments to guide siting decisions by developers and agencies. Furthermore, the Guidelines address all elements of a wind energy facility, including the turbine string or array, access roads, ancillary buildings, and the above-and below-ground electrical lines which connect a project to the transmission system.

Recommendations:

F-4.14 Conduct additional pre-construction surveys of raptors and bats prior to siting turbines, including those areas not previously surveyed in 2007 and 2008 (Study Areas B and C).

[3] U.S. Fish and Wildlife Service Wind Turbine Guidelines Advisory Committee Recommendations, submitted to the Secretary of the Interior by the U.S. Fish and Wildlife Service, March 4, 2010. See Internet address: http://www.fws.gov/habitatconservation/windpower/Wind_Turbine_Guidelines_Advisory_Committee_Recommendations_Secretary.pdf

F-4.15 Commit to post-construction monitoring studies as described by the Wind Turbine Guidelines Advisory Committee. We strongly recommend that post-construction monitoring be conducted for at least two years.

Complete biological surveys for Study Areas B & C prior to construction in Study Area A.

Consider whether it would be prudent to conduct raptor studies over a broader area than Study Areas A, B, & C (wind park). Some raptor studies in California have extended up to 10 miles beyond the project boundary for a renewable energy project.

F-4.16 EPA encourages Western and the Applicant to include in the FEIS a commitment to reduce impacts to migratory birds and eagles. We encourage Western and the Applicant to relocate, reduce, or eliminate portions of the project footprint that would adversely affect threatened, endangered, or sensitive species or their potential habitat. Additional actions that should be considered are discussed below.

F-4.16 *Recommendations:*
Minimize placement of wind turbines near prairie dog towns within the proposed project area.

Consider a tactical shut down option during critical hours of species activity, as appropriate, to minimize adverse impacts on such species.

Consider blade feathering/idling (including on-the-spot and seasonal shutdowns), reducing cut-in speeds, and adjusting turbine speeds during strategic intervals to reduce take and to prevent mortality.

Consider utilizing unique types of radar technology to monitor for bird and bats. [4]

Implement and use design models that present the least threat to all wildlife for all transmission and distribution lines, as well as associated infrastructure at substations/switchyards.

The DEIS states that a Biological Assessment is being prepared under Section 7 of the Endangered Species Act (ESA) for federally listed species (pg. 180). Should it be determined that the proposed Federal actions would adversely affect federally listed species, Western will request a Biological Opinion from the U.S. Fish and Wildlife Service.

F-4.17 *Recommendation:*
EPA recommends Western include the Biological Assessment and the outcome of its consultation with the U.S. Fish and Wildlife Service in the FEIS.

[4] For example, see http://www.detect-inc.com/avian.html and http://www.upi.com/Science_News/Resource-Wars/2010/03/18/Radar-reduces-wind-farm-risk-to-birds/UPI-71441268920323/. These resources are provided as examples only and do not constitute endorsement of any particular product by EPA.

According to the DEIS, any avian and bat mortalities caused by the operation of the wind park would be an unavoidable adverse impact, and would be addressed pursuant to its Avian and Bat Protection Plan.

F-4.18 *Recommendation:*
Include a copy of the Avian and Bat Protection Plan within the FEIS.

Implementation of Adaptive Management Techniques for Mitigation Measures

Adaptive management is an iterative process that requires selecting and implementing management actions, monitoring, comparing results with management and project objectives, and using feedback to make future management decisions. The process recognizes the importance of continually improving management techniques through flexibility and adaptation instead of adhering rigidly to a standard set of management actions. For adaptive management to succeed, there must be agreement to adjust management and/or mitigation measures if monitoring indicates that goals are not being met. Although adaptive management is not a new concept, it may be relatively new in its application to specific projects. As stated in a recent CEQ report, *Modernizing NEPA*, the effectiveness of adaptive management monitoring depends on a variety of factors including:

a) The ability to establish clear monitoring objectives;
b) Agreement on the impact thresholds being monitored;
c) The existence of a baseline or the ability to develop a baseline for the resources being monitored.
d) The ability to see the effects within an appropriate time frame after the action is taken;
e) The technical capabilities of the procedures and equipment used to identify and measure changes in the affected resources and the ability to analyze the changes;
f) The resources needed to perform the monitoring and respond to the results.

F-4.19 *Recommendations*:
EPA recommends that the Applicant consider adopting a formal Adaptive Management Plan to ensure the success of mitigation measures and to provide management flexibility to incorporate new research and information.

EPA recommends that the Adaptive Management Plan include a timeline for periodic reviews and adjustments, as well as a mechanism to consider and implement additional mitigation measures, as necessary, after the project is developed. Monitoring and evaluation should be used to determine if management actions are achieving objectives.

F-4.19 EPA recommends that Western, the Forest Service, and the Applicant review the specific discussion on Adaptive Management in the NEPA Task Force Report to the Council on Environmental Quality on *Modernizing NEPA*.

Air Quality

The DEIS provides standards of significance for air quality impacts and states that impacts would be greatest during the construction period (pg. 123). Air quality impacts would include emissions from internal combustion engines during equipment operation, fugitive dust from vehicle travel and site grading activities, and operation of a rock crushing plant and concrete batch plant. According to the DEIS, the batch plants proposed for use would emit less than 250 ton/year (tpy) of any criteria pollutant and would not require a major source permit, but rather a minor source permit from the Arizona Department of Environmental Quality (ADEQ). Operational impacts would be restricted to dust and internal combustion engine emissions due to periodic maintenance vehicle traffic. The DEIS indicates that, with implementation of the mitigation, construction activities and vehicle and equipment emissions are not expected to violate air quality standards, and air quality significance thresholds would not be exceeded (pg. 123; pg. 124). EPA is concerned that the DEIS does not provide estimates for construction emissions and vehicle and equipment emissions, as well as estimated mitigated annual emissions. In order to support the conclusions presented in the DEIS that standards and thresholds will not be exceeded, we request that the FEIS provide a more robust analysis of the emissions from the proposed project.

The DEIS states that there are currently no sources of electricity within the wind park study area. A temporary source of electricity would be required for construction. Two options are under consideration: 1) on-site generation, or 2) extending an electrical distribution line along Meteor Crater Road (pg. vi). Should the Applicant select on-site generation, these emissions should be accounted for in the air quality analysis.

F-4.20 *Recommendation:*
The FEIS should contain a more robust analysis of emissions from construction, vehicle use, and equipment use, including estimated mitigated annual emissions. Emissions associated with on-site generation of electricity during construction should be included in this analysis.

EPA supports incorporating mitigation strategies to minimize fugitive dust emissions, as well as emission controls for particulate matter (PM) and ozone precursors for construction-related activity. All applicable State and local requirements and the additional and/or revised measures listed below should be included in the FEIS in order to reduce impacts associated with ozone precursors, PM, and toxic emissions from construction-related activities.

Recommendations:
EPA recommends that best management practices, all applicable requirements under local or State rules, and the following additional measures be implemented at all times and incorporated into the FEIS, a Construction Emissions Mitigation Plan, and the Record of Decision.

F-4.21 Fugitive Dust Source Controls:

- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both

inactive and active sites, during workdays, weekends, holidays, and windy conditions.
- Install wind fencing, and phase grading operations, where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, prevent spillage, and limit speeds to 15 miles per hour (mph). Limit speed of earth-moving equipment to 10 mph.

Mobile and Stationary Source Controls:
- Reduce use, trips, and unnecessary idling of heavy equipment.
- Maintain and tune engines per manufacturer's specifications to perform EPA certification levels, where applicable, and to perform at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.
- Prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations
- If practicable, lease new, clean equipment meeting the most stringent of applicable Federal or State Standards.
- Utilize EPA-registered particulate traps and other appropriate controls where suitable, to reduce emissions of diesel particulate matter and other pollutants at the construction site.
- Limit vehicle speeds on unpaved roads to 15 mph.

F-4.21

Administrative controls:
- Identify all commitments to reduce construction emissions and incorporate these reductions into the air quality analysis to reflect additional air quality improvements that would result from adopting specific air quality measures.
- Identify where implementation of mitigation measures is deemed to be not implementable due to economic infeasibility and provide comparable determinations for other similar projects as justification for this decision.
- Prepare an inventory of all equipment prior to construction, and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on: whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.)
- Meet EPA diesel fuel requirement for off-road and on-highway (i.e., 15 ppm), and where appropriate use alternative fuels such as natural gas and electric.
- Develop construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.
- Identify sensitive receptors in the project area, such as children, elderly, and infirm, and specify the means by which you will minimize impacts to these populations. For example, locate construction equipment and staging zones away from sensitive receptors and fresh air intakes to buildings and air conditioners.

Climate Change

The DEIS presents a brief discussion on greenhouse gas emissions in Arizona in Section 3.5.1.2, Climate Change/Greenhouse Gas (pg. 122). Operation of the wind park would have a net benefit to air quality, as wind energy produces no air emissions (pg. 125). The DEIS does not, however, include measures to avoid, minimize, or mitigate the effects of climate change on the proposed project, nor does it discuss the extent to which climate change may alter the impacts of the proposed project on the environment. Scientific evidence supports the concern that continued increases in greenhouse gas emissions resulting from human activities will contribute to climate change. Effects on weather patterns, sea level, ocean acidification, chemical reaction rates, and precipitation rates can be expected. These changes may affect the scope and intensity of impacts resulting from the proposed project.

F-4.22

Recommendations:
Consider how climate change could affect the proposed project, specifically within sensitive areas, and assess how the impacts of the proposed project could be exacerbated by climate change.

Identify strategies to more effectively monitor for climate change impacts in the surrounding area, such as monitoring for groundwater change and effects on special status species.

Identify specific mitigation measures needed to protect the Proposed Project from the effects of climate change.

Quantify and disclose the anticipated climate change *benefits* of wind energy. We suggest quantifying the greenhouse gas emissions that would be produced by other types of electric generating facilities (solar, geothermal, natural gas, coal-burning, and nuclear) generating comparable amounts of electricity, and compiling and comparing these values.

Cultural Resources, National Historic Resources and Consultation with Tribal Governments

Consultation for tribal cultural resources is required under Section 106 of the National Historic Preservation Act (NHPA). Historic properties under the NHPA are properties that are included in the National Register of Historic Places (NRHP) or that meet the criteria for the National Register. Section 106 of the NHPA requires a federal agency, upon determining that activities under its control could affect historic properties, to consult with the appropriate State Historic Preservation Officer/Tribal Historic Preservation Officer (SHPO/THPO).

Executive Order 13007, Indian Sacred Sites (May 24, 1996), requires federal land managing agencies to accommodate access to, and ceremonial use of, Indian sacred sites by Indian Religious practitioners, and to avoid adversely affecting the physical integrity, accessibility, or use of sacred sites. Executive Order 13175, Consultation and Coordination with Indian Tribal Governments (November 6, 2000), was issued in order to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal

policies that have tribal implications, and to strengthen the United States' government-to-government relationships with Indian tribes. President Obama directed all federal agencies to develop an action plan to implement this Executive Order by February 3, 2010. For more information, refer to: http://www.whitehouse.gov/the-press-office/memorandum-tribal-consultation-signed-president.

The DEIS states that Western has initiated consultation with the Hopi and Zuni Tribes and the Navajo Nation. The DEIS indicates that research identified 678 previously recorded cultural resources within the cultural resources evaluation area. Twenty-four of these sites potentially occur within 100 feet of the wind park study area, tie-line, and/or switchyard. Of the 24 sites, four are recommended as eligible for listing in the NRHP. According to the DEIS, a draft Programmatic Agreement (PA) among Western, Coconino National Forest, Arizona State Lands Division, Arizona SHPO, the Applicant, Tribes and other interested parties has been prepared and is currently under review. The PA establishes the area of potential effect for the proposed project, proposes a treatment plan for identified resources that cannot be avoided, describes procedures for unanticipated discoveries, sets forth procedures for tribal consultation, and suggests general mitigation measures (pg. 112).

F-4.23 *Recommendations:*
Describe the process and outcome of government-to-government consultation between Western and each of the tribal governments within the project area, issues that were raised (if any), and how those issues were addressed in relation to the proposed action and selection of a preferred alternative.

Include a copy of the PA within the FEIS, if available.

Cumulative Impacts Analysis

The DEIS presents a summary of past, present, and reasonably foreseeable future actions including the Sunshine Wind Project (table 4.2-1).

F-4.24 *Recommendation:*
Provide an illustration of the location of the Sunshine Wind Project.

Project Decommissioning

The life of the proposed wind park is expected to be 25 years or more. The wind park owner may elect to renew the land leases at the end of the contracted agreements depending on power market conditions and future contracts for sale of electricity (pg. 183). The WTGs may also be updated with more efficient components, extending the life of the wind park. According to the DEIS, the wind park owner would have the obligation to decommission the facility and perform reclamation as required by the landowners and appropriate land management agencies or jurisdictional authorities.

F-4.25 *Recommendations:*
EPA recommends that the FEIS identify bonding or financial assurance strategies for decommissioning and reclamation. The projected 25-year lifespan should be used to ascertain the correct financial instruments that could be used for bond and or financial assurance calculations.

The FEIS should take into consideration the increased cost (projected future rates) of decommissioning in 25 years and make provisions for extended or refurbished use.

Comments from the Arizona Wildlife Federation on the Grapevine Canyon Wind project, September 2010

Pronghorn

O-1.1

A timing restriction on construction within summer pronghorn habitat, particularly the transmission line, should be implemented during the fawning season (April 15 – May 31) to mitigate potential impacts to pronghorn during this critical period.

Rationale:

The tie-line, switchyard, and the wind park study area fall within the range of the Anderson Mesa herd of pronghorn antelope. This population declined throughout recent decades as a result of habitat degradation and drought (AGFD 2007b; Forest Service 2002). Volume I page 96

The primary management issue for the Anderson Mesa pronghorn herd is low fawn recruitment (AZGFD 2007). EIS Volume II appendix D Page 57

Approximately 63.2% of the Transmission Line is comprised of grassland habitat and pronghorn antelope likely occur in these areas, particularly during the summer breeding season. EIS Volume II Wildlife and Botanical Report page 44

Construction may also result in short-term changes in pronghorn movement or behavior if pronghorn occur in the project area during construction EIS page 105.

The Coconino National Forest institutes annual road closures on Anderson Mesa to reduce disturbance impacts to pronghorn fawning. The EIS acknowledges that construction could result in short term changes in pronghorn movement or behavior if pronghorn occur in the project area during construction. Based on the high percentage of grassland habitat, known antelope use in this area of Anderson Mesa, and concern for fawn recruitment for this herd, it seems mitigation of any potential disturbance to pronghorn fawning is warranted

Wetlands and Riparian Areas

O-1.2

Wetlands and riparian areas are extremely important and limited habitat types. The EIS should disclose if these areas will be impacted. These areas should be located and any potential impacts disclosed for consideration prior to a final decision on the project.

Page 87 of the EIS states: *Wetland delineations have not been performed at this time but would be completed prior to project construction within areas subject to permanent and temporary disturbance.*

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September 7, 2010

Mr. Matt Blevins
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228
Submitted via email to GrapevineWindEIS@wapa.gov

Dear Mr. Blevins:

Please accept these comments on the Grapevine Canyon Wind Project on behalf of the Sierra Club's Grand Canyon Chapter and our 12,000 members in Arizona.

The Sierra Club is the nation's oldest and largest grassroots conservation organization, founded in 1892 and having more than 1.3 million members and supporters nationwide, including more than 12,000 in the Grand Canyon (Arizona) Chapter. The Sierra Club's mission is "to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; and to educate and enlist humanity to protect and restore the quality of the natural and human environments." The Sierra Club has been involved for many years in working to protect Arizona's public lands, wildlife, air and water. The Sierra Club is also very interested and involved in promoting renewable energy and energy efficiency as a means to reduce greenhouse gas emissions and help limit global climate change. We strongly believe that properly sited renewable energy resources are part of the solution to this most challenging issue.

General Comments and Background

It is clear that energy generated with fossil fuels has serious impacts to our wildlands – from mining and drilling associated with accessing it to the greenhouse gas emissions from burning the fuels and the impacts of global climate change. Our nation must transition to clean renewable energy sources in order to sustain both our human and wildland communities. Some public lands harbor substantial wind, solar, and geothermal resources. Developing some of these resources will be important to creating a sustainable energy economy and combating climate change. Renewable resource development is not appropriate everywhere on the public lands, however, and any development that does occur on the public lands must take place in a responsible manner. Whenever possible, we think it is most appropriate to seek disturbed sites for these types of projects.

The National Environmental Policy Act (NEPA) and the regulations promulgated to implement the act (42 U.S.C. § 4321, *et seq*., 40 CFR § 1500.1, *et seq*.) mandate that the Western Area Power Administration (Western) assess and evaluate the environmental impacts of the **Grapevine Canyon Wind Project** and that reasonable alternatives be considered (42 U.S.C. § 4332 102 C). Western, as the lead agency for this project, must consider cumulative impacts as well as direct and indirect impacts of the proposed wind project (40 CFR ~ 1508.7). The project area includes a wind generating facility that is located on private and state trust lands, which may be built in two or more phases; a 200 foot right-of-

way across Forest Service lands in order to construct and operate a 345 kV electric transmission tie-line; an access road; and an interconnection switchyard on 15 acres of Forest Service land.

There will be a temporary land disturbance of 2,419-2,630 acres of land and permanent disturbance and removal of vegetation from 591-627 acres of land. The project will include either 333 1.5-MW wind turbine generators, 277 1.8-MW wind turbine generators, or 166 3.0-MW wind turbine generators, any of which will have a substantial impact on the area and surrounding public lands.

Large-scale wind turbine groupings, often called wind farms, such as the proposed Grapevine Canyon Wind Project, can have significant impacts on populations of plants as well as on birds, bats and other species. How, where and when equipment is sited and operated can help minimize these impacts.

The most publicized impacts of operating large-scale wind turbines are to birds and bats through collision with moving turbines, which leads to almost certain mortality. There is also some evidence that bats are affected by barotrauma (rapid pressure change that causes tissue damage or pulmonary hemorrhage) related to the change in air pressure near the moving turbine blades. Other species, including small mammals and plants, may be affected by ground disturbance, during migration, and from other impacts of construction and operation.

O-2.1 While the DEIS proposes some limited mitigation and Resource Protection Measures (RPMs) for the proposed project, they are limited to proposed switchyard and tie-line. We believe this scope is too narrow as the project is clearly dependent on utilizing the public's lands and the public's transmission lines. The impacts of the overall project should be considered and mitigation included.

Wildlife

O-2.2 One of the greatest concerns regarding a project of this magnitude is the potentially significant negative impacts on wildlife. As noted above and in the Draft Environmental Impact Statement (DEIS), the most significant impacts of wind turbine operation are bird and bat mortalities. Thorough surveys of birds, mammals, plants and other wildlife are an essential first step in avoiding and minimizing impacts. This includes surveys in all seasons to capture migration periods and fluctuations in population depending on the season. Surveys should be done at night as well as during daylight as migration, particularly of birds, often happens at night. Since less is known about affected species such as bats, monitoring is very important to determine the baseline presence of bat species.

Per the DEIS, several bat species utilize the project area, so monitoring there is important.

O-2.3 While much has been said about improvements to turbine design to reduce bird and bat mortality, the rates of mortality appear not to change significantly with different designs. However, research over the past two decades has pointed to a number of siting and operational options that can greatly reduce wildlife impacts based upon where turbines are sited and when they operate.

- Monitor before and during construction and operation to identify and minimize bird and bat mortality. Studies[1] suggest that frequent surveying of footprint areas for dead birds and bats is

[1] Arnett, E. B., technical editor. 2005. Relationships between bats and wind turbines in Pennsylvania and West Virginia: an assessment of bat fatality search protocols, patterns of fatality, and behavioral interactions with wind turbines. A final report submitted to the Bats and Wind Energy Cooperative. Bat Conservation International. Austin, Texas, USA.

O-2.3 important as they may quickly disappear due to scavengers. Monitoring should include a baseline analysis of the nocturnal migration of songbirds as well as any detected bat migration.

O-2.4
- Avoid raptor concentration areas: Much has been written about the high raptor mortality at Altamont Pass in northern California. By avoiding raptor nesting and migration corridors, raptor fatalities can be minimized. Through wildlife surveys, scientists can also identify where raptors spend their time searching for prey, and these areas can then be avoided for turbine placement.

O-2.5
- Avoid canyons, passes and other migration pathways: Valleys, swales and low passes have been found to be used most by migrating birds and should also be avoided.

O-2.6
- Require setbacks from windward rims: Various studies have shown high use by raptors of rim edge habitats. Required setbacks of 100 meters for turbines can help reduce loss of raptors.

O-2.7
- Site turbines in open habitats at least one mile from woodland areas in order to reduce the likelihood of bat mortality. The main bat species known to be affected by wind turbines are woodland species. It is particularly important to completely avoid any old growth forest areas.

O-2.8
- Shut down turbines in late summer and early fall when bats are migrating and mortalities are highest.[2]

O-2.9
- Require a minimum "cut-in" speed of six meters per second to avoid bat mortalities at slow turbine speeds. There is a correlation between bat mortality and turbine operation during light wind speed.[3]

O-2.10
- Study the impacts of wind energy facilities on large ungulates before construction in any of these areas. Not enough is known about the tolerance for wind energy facilities by large ungulates including elk, deer and pronghorn or the impacts on crucial habitats as well as migratory corridors.

O-2.11
- Construct wind facilities in a season when animals are not migrating in areas where these facilities intersect with critical ranges or migration corridors of large mammals.

O-2.12
- Close turbine areas to vehicles and human use during the period of habitation by sensitive species of wildlife.

O-2.13 Larger mammals, including elk, deer and pronghorn, can be affected by long rows of turbines along migration routes or in calving areas. In addition, pronghorn, elk and, to some extent, mule deer avoid areas with roads or other human development. This site includes some pronghorn, elk, and mule deer habitat, so there are likely to be some negative impacts on these species and mitigation of those impacts should be considered.

O-2.14 Because the potential impacts to wildlife are so significant, we ask that *Guidelines for Reducing Impacts to Wildlife from Wind Energy Development in Arizona*[4], developed by the Arizona Game and Fish

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[2] Behavioral Responses of Bats to Operating Wind Turbines, Horn, Jason W. et al. Journal of Wildlife Management 72(1):123–132; 2008)

[3] *Id.*

[4] Arizona Game and Fish Department. 2008. *Guidelines for Reducing Impacts to Wildlife from Wind Energy Development in Arizona.*

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O-2.14 Department, be utilized for ensuring wildlife-friendly alternatives and be considered as part of the Final Environmental Impact Statement.

Bats

According to the DEIS, 11 species of bats have been recovered in carcass surveys at wind facilities in the U.S. and five out of those 11 species are migrants or potential residents in the Grapevine Canyon Wind Resource Area. They include hoary bat (*Lasiurus cinereus*), silver-haired bat *(Lasionycteris noctivagans)*, Mexican free-tailed bat (*Tadarida brasiliensis mexicanus*), big brown bat(*Eptesicus fuscus)*, and western red bat *(Lasirurs blossevillii)*. There are also 20 species of bats total that may occur in this project area. Both the spotted bat and western red bat are listed as species of concern.

According to the U.S. Geological Survey, dead bats have been found around wind turbines in locations throughout the world and in nearly every site in North America.[5] There are still a lot of unanswered questions as to why, but there is information available that can be useful in siting the projects, evaluating the projects, determining operation of the projects, and mitigating impacts.

Two species of migratory tree bats, the hoary and silver-haired bat, appear to account for 75% or more of wind power related bat mortality in the West. They are primarily associated with woodland areas and use trees for roosts, so turbines should be located at least one mile from these woodlands in order to minimize bat mortality. The reason for mortality is still under study, but most of it occurs during late summer and fall, which coincides with their main migratory period. As these bats have been found in the project area, special care should be taken relative to these species, and mitigation measures to reduce mortality of the bats should be included in the project design.

Studies of bat fatalities indicate that weather patterns have an effect – most bats are killed on nights with lower wind speeds. More bats were killed before and after storm fronts passed through as well.[6] This means some operational changes can also minimize bat mortalities. Requiring minimum "cut-in" speeds of approximately six meters per second can help avoid bat mortalities at slow turbine speeds.[7,8] Shutting down turbines in late summer and early fall when bats are migrating and mortalities are highest can also help to minimize bat mortalities associated with the turbines.

Birds

Birds suffering mortality from moving wind turbine blades include raptors, songbirds (passerines) and others. Bird mortality has been severe at some locations, but changes to location and operation of turbines may reduce the toll. As noted above, monitoring before and during construction and operation to identify and minimize bird mortality is critical. Monitoring should include a baseline analysis of the nocturnal migration of songbirds.

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[5] Bat Fatalities at Wind Turbines: Investigating the Causes and Consequences *available at* http://www.mesc.usgs.gov/BatsWindmills/ (last visited 12/30/2009)

[6] Arnett, Edward B., et al, January 2008. Patterns of Bat Fatalities at Wind Energy Facilities in North America, *Journal of Wildlife Management* 72(1):61-78. 2008.

. [7] Baerwald, E.F., J. Edworthy, M. Holder, and R.M.R. Barclay. 2009. A large-scale mitigation experiment to reduce bat fatalities at wind energy facilities. Journal of Wildlife Management 73(7): 1077–1081

[8] Arnett, E.B., M. Schirmacher, M.M.P. Huso, J.P. Hayes. 2009. Effectiveness of changing wind turbine cut-in speed to reduce bat fatalities at wind facilities. An annual report submitted to the Bats and Wind Energy Cooperative. Bat Conservation International. Austin, Texas, USA.

The turbines should be located away from any raptor concentration areas and at least 100 meters from any windward rims to minimize raptor loss.[9] Likewise, canyons, passes and any other migration paths should be avoided. Raptors are especially susceptible to mortality associated with wind turbines as they are more apt to collide with the turbines than some other birds. Much has been written about the high raptor mortality at Altamont Pass in northern California[10] as well as at Tehachapi Pass.[11] By avoiding raptor nesting and migration corridors, raptor fatalities can be minimized. Through wildlife surveys, scientists can also identify where raptors spend their time searching for prey, and these areas can then be avoided for turbine placement.

According to the DEIS, seventeen diurnal raptor species have potential to occur in the project area and 10 species were observed during the baseline surveys. Eight have the potential to nest or reside year-round within the evaluation area including the sharpshinned hawk (*Accipiter striatus*), Cooper's hawk (*Accipiter cooperii*), northern goshawk, red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), bald eagle, American kestrel (*Falco sparverius*), and prairie falcon (*Falcon mexicanus*). Eight species of owls also occur in the area.

Pronghorn

O-2.15 Of particular concern is the impact of this project on the pronghorn on Anderson Mesa. There has been considerable controversy to date regarding the decline of this herd and the impacts of livestock grazing. The numbers have significantly dwindled. Pronghorn are especially sensitive to roads and fences. This project includes construction of a transmission line through Anderson Mesa and the heart of some pronghorn habitat. The construction basically entails building a road under the lines.

O-2.16 Roads and motorized uses have serious detrimental effects on habitats and wildlife.[12,13,14] These effects include direct, indirect and cumulative impacts, ranging from mortality from collisions with vehicles, modification of animal behaviors, altered use of habitats, facilitation of the spread of exotic, invasive and parasitic species, adverse genetic effects and fragmentation of connected habitats. These impacts are not limited to paved route networks. Cole states that "off-road vehicle impacts are particularly serious and difficult to manage. Off-road vehicle (ORV) impacts are particularly troublesome because impact potential is so high."[15]

Vegetation and Invasive Plants

[9] Molvar, E.M. 2008. Wind power in Wyoming: doing it smart from the start. Laramie, WY. Biodiversity Conservation Alliance, 55 pp. Available online at http://www.voiceforthewild.org/blm/pubs/WindPowerReport.pdf.
[10] Thelander, C.G., S. Smallwood, and L. Rugge. 2003. Avian risk behavior and fatalities at the Altamont Wind Resource Area - March 1998 to December 2000. Progress Report to the National Renewable Energy Laboratory, Subcontract No. TAT-8-182209-01. K. Sinclair, Technical Monitor.
[11] Anderson, R., N. Neumann, and J. Tom. September 2004. Avian Monitoring and Risk Assessment at the Tehachapi Pass Wind Resource Area, National Renewable Energy Laboratory Subcontractor Report.
[12] Trombulak , S.C. and C.A. Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. Conservation Biology 14: 18-30.
[13] Wisdom, M.J., A.A. Ager, H.K. Preisler, N.J. Cimon, and B.K. Johnson. 2004. Effects of off-road recreation on mule deer and elk. Transactions of the North American Wildlife and Natural Resources Conference 69: 531-550.
[14] van Riper, C. III., and R. Ockenfels. 1998. The influence of transportation corridors on the movement of pronghorn antelope over a fragmented landscape in northern Arizona. Proceedings International Conference on Wildlife Ecology and Transportation (ICOWET).
[15] Cole, D.N. 1986. Resource impacts caused by recreation. A literature review for the President's Commission on Americans Outdoors, INT4901, Publication #165, 12 pp. Available online at http://www.fs.fed.us/rm/pubs_other/rmrs_1986_cole_d001.pdf.

O-2.17 We appreciate that the DEIS outlines the need to minimize soil disturbance and limit opportunities for the spread of invasive plant species. We strongly support measures to revegetate with native endemic species. We encourage consideration of these measures for the overall project.

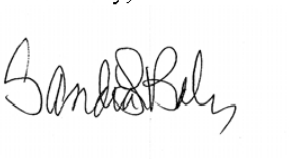
Summary

Again, we want to reiterate our support for clean renewable energy sources such as wind. We do think it is critical that these facilities be properly sited and conflicts with wildlife and overall environmental

O-2.18 impacts minimized and mitigated, where possible. We encourage a broader consideration of the overall impacts of this project due to the fact that the public lands and transmission are integral components of it moving forward. Consideration of minimizing the impacts on the state and private lands and any mitigation should be included.

Thank you for considering our comments.

Sincerely,



Sandy Bahr
Chapter Director
Sierra Club – Grand Canyon Chapter

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Janice K. Brewer
Governor

Benjamin H. Grumbles
Director

August 11, 2010

Mr. Matt Blevins, NEPA Document Manager
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228-8213

Re: Coconino County: Grapevine Canyon Wind Project Draft Environmental Impact Statement

Dear Mr. Blevins:

S-1.1 The Air Quality Division has reviewed your letter, dated July 20, 2010, that was submitted to ADEQ for comments. The proposed Grapevine Canyon Wind Project, as described, is located in an attainment area for 10-micron particulate matter (PM10) and other air pollutants, and is likely to have a de minimis impact on air pollution. Nevertheless, considering the area location, prevailing winds, and to comply with other applicable air pollution control requirements and minimize adverse impacts on public health and welfare, the following information is provided:

REDUCE DISTURBANCE of PARTICULATE MATTER during CONSTRUCTION

This action, plan or activity may temporarily increase ambient particulate matter (dust) levels. Particulate matter 10 microns in size and smaller can penetrate the lungs of human beings and animals and is subject to a National Ambient Air Quality Standard (NAAQS) to protect public health and welfare. Particulate matter 2.5 microns in size and smaller is difficult for lungs to expel and has been linked to increases in death rates; heart attacks by disturbing heart rhythms and increasing plaque and clotting; respiratory infections; asthma attacks and cardiopulmonary obstructive disease (COPD) aggravation. It is also subject to a NAAQS.

The following measures are recommended to reduce disturbance of particulate matter, including emissions caused by strong winds as well as machinery and trucks tracking soil off the construction site:

S-1.2
I. Site Preparation and Construction
   A. Minimize land disturbance;
   B. Suppress dust on traveled paths which are not paved through wetting, use of watering trucks, chemical dust suppressants, or other reasonable precautions to prevent dust entering ambient air
   C. Cover trucks when hauling soil;

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S-1.2

D. Minimize soil track-out by washing or cleaning truck wheels before leaving construction site;
E. Stabilize the surface of soil piles; and
F. Create windbreaks

S-1.3

II. Site Restoration
A. Revegetate any disturbed land not used;
B. Remove unused material; and
C. Remove soil piles via covered trucks.

The following rules applicable to reducing dust during construction, demolition and earth moving activities are enclosed:

- Arizona Administrative Code R18-2-604 through -607
- Arizona Administrative Code R18-2-804
- Pinal County Code Chapter 4

Should you have further questions, please do not hesitate to call Bonnie Cockrell at (602) 771-2378 or Dave Biddle at (602) 771-2376 of the Planning Section Staff.

Very truly yours,

Diane L. Arnst, Manager
Air Quality Planning Section

Enclosures

cc: Bret Parke, EV Administrative Counsel
David A. Biddle, Environmental Program Specialist
File No. 241843

c. If the burning would occur at a solid waste facility in violation of 40 CFR 258.24 and the Director has not issued a variance under A.R.S. § 49-763.01.

E. Open outdoor fires of dangerous material. A fire set for the disposal of a dangerous material is allowed by the provisions of this Section, when the material is too dangerous to store and transport, and the Director has issued a permit for the fire. A permit issued under this subsection shall contain all provisions in subsection (D)(3) except for subsections (D)(3)(e) and (D)(3)(f). The Director shall permit fires for the disposal of dangerous materials only when no safe alternative method of disposal exists, and burning the materials does not result in the emission of hazardous or toxic substances either directly or as a product of combustion in amounts that will endanger health or safety.

F. Open outdoor fires of household waste. An open outdoor fire for the disposal of household waste is allowed by provisions of this Section when permitted in writing by the Director or a delegated authority. A permit issued under this subsection shall contain all provisions in subsection (D)(3) except for subsections (D)(3)(e) and (D)(3)(f). The permittee shall conduct open outdoor fires of household waste in an approved waste burner and shall either:

1. Burn household waste generated on-site on farms or ranches of 40 acres or more where no household waste collection or disposal service is available; or
2. Burn household waste generated on-site where no household waste collection and disposal service is available and where the nearest other dwelling unit is at least 500 feet away.

G. Permits issued by a delegated authority. The Director may delegate authority for the issuance of open burning permits to a county, city, town, air pollution control district, or fire district. A delegated authority may not issue a permit for its own open burning activity. The Director shall not delegate authority to issue permits to burn dangerous material under subsection (E). A county, city, town, air pollution control district, or fire district with delegated authority from the Director may assign that authority to one or more private fire protection service providers that perform fire protection services within the county, city, town, air pollution control district, or fire district. A private fire protection provider shall not directly or indirectly condition the issuance of open burning permits on the applicant being a customer. Permits issued under this subsection shall comply with the requirements in subsection (D)(3) and be in a format prescribed by the Director. Each delegated authority shall:

1. Maintain a copy of each permit issued for the previous five years available for inspection by the Director;
2. For each permit currently issued, have a means of contacting the person authorized by the permit to set an open fire if an order to extinguish open burning is issued; and
3. Annually submit to the Director by May 15 a record of daily burn activity, excluding household waste burn permits, on a form provided by the Director for the previous calendar year containing the information required in subsections (D)(3)(e) and (D)(3)(f).

H. The Director shall hold an annual public meeting for interested parties to review operations of the open outdoor fire program and discuss emission reduction techniques.

I. Nothing in this Section is intended to permit any practice that is a violation of any statute, ordinance, rule, or regulation.

Historical Note

Adopted effective May 14, 1979 (Supp. 79-1). Amended effective October 2, 1979 (Supp. 79-5). Correction, subsection (C) repealed effective October 2, 1979, not shown (Supp. 80-1). Former Section R9-3-602 renumbered without change as Section R18-2-602 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-602 renumbered to R18-2-802, new Section R18-2-602 renumbered from R18-2-401 effective November 15, 1993 (Supp. 93-4). Amended by final rulemaking at 10 A.A.R. 388, effective March 16, 2004 (Supp. 04-1).

R18-2-603. Repealed

Historical Note

Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-603 renumbered without change as Section R18-2-603 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-603 renumbered to R18-2-803, new Section R18-2-603 renumbered from R18-2-403 effective November 15, 1993 (Supp. 93-4). Repealed effective October 8, 1996 (Supp. 96-4).

R18-2-604. Open Areas, Dry Washes, or Riverbeds

A. No person shall cause, suffer, allow, or permit a building or its appurtenances, or a building or subdivision site, or a driveway, or a parking area, or a vacant lot or sales lot, or an urban or suburban open area to be constructed, used, altered, repaired, demolished, cleared, or leveled, or the earth to be moved or excavated, without taking reasonable precautions to limit excessive amounts of particulate matter from becoming airborne. Dust and other types of air contaminants shall be kept to a minimum by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means.

B. No person shall cause, suffer, allow, or permit a vacant lot, or an urban or suburban open area, to be driven over or used by motor vehicles, trucks, cars, cycles, bikes, or buggies, or by animals such as horses, without taking reasonable precautions to limit excessive amounts of particulates from becoming airborne. Dust shall be kept to a minimum by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means.

C. No person shall operate a motor vehicle for recreational purposes in a dry wash, riverbed or open area in such a way as to cause or contribute to visible dust emissions which then cross property lines into a residential, recreational, institutional, educational, retail sales, hotel or business premises. For purposes of this subsection "motor vehicles" shall include, but not be limited to trucks, cars, cycles, bikes, buggies and 3-wheelers. Any person who violates the provisions of this subsection shall be subject to prosecution under A.R.S. § 49-463.

Historical Note

Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-604 renumbered without change as Section R18-2-604 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-604 renumbered to R18-2-804, new Section R18-2-604 renumbered from R18-2-404 and amended effective November 15, 1993 (Supp. 93-4).

R18-2-605. Roadways and Streets

A. No person shall cause, suffer, allow or permit the use, repair, construction or reconstruction of a roadway or alley without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne. Dust and other particulates shall be kept to a minimum by employing temporary paving, dust suppressants, wetting down, detouring or by other reasonable means.

B. No person shall cause, suffer, allow or permit transportation of materials likely to give rise to airborne dust without taking reasonable precautions, such as wetting, applying dust suppressants, or covering the load, to prevent particulate matter from becoming airborne. Earth or other material that is deposited by trucking or earth moving equipment shall be removed from paved streets by the person responsible for such deposits.

Historical Note

Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-605 renumbered without change as Section R18-2-605 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-605 renumbered to R18-2-805, new Section R18-2-605 renumbered from R18-2-405 effective November 15, 1993 (Supp. 93-4).

R18-2-606. Material Handling

No person shall cause, suffer, allow or permit crushing, screening, handling, transporting or conveying of materials or other operations likely to result in significant amounts of airborne dust without taking reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods to prevent excessive amounts of particulate matter from becoming airborne.

Historical Note

Section R18-2-606 renumbered from R18-2-406 effective November 15, 1993 (Supp. 93-4).

R18-2-607. Storage Piles

A. No person shall cause, suffer, allow, or permit organic or inorganic dust producing material to be stacked, piled, or otherwise stored without taking reasonable precautions such as chemical stabilization, wetting, or covering to prevent excessive amounts of particulate matter from becoming airborne.

B. Stacking and reclaiming machinery utilized at storage piles shall be operated at all times with a minimum fall of material and in such manner, or with the use of spray bars and wetting agents, as to prevent excessive amounts of particulate matter from becoming airborne.

Historical Note

Section R18-2-607 renumbered from R18-2-407 effective November 15, 1993 (Supp. 93-4).

R18-2-608. Mineral Tailings

No person shall cause, suffer, allow, or permit construction of mineral tailing piles without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne. Reasonable precautions shall mean wetting, chemical stabilization, revegetation or such other measures as are approved by the Director.

Historical Note

Section R18-2-608 renumbered from R18-2-408, new Section R18-2-408 adopted effective November 15, 1993 (Supp. 93-4).

R18-2-609. Agricultural Practices

A person shall not cause, suffer, allow, or permit the performance of agricultural practices outside the Phoenix and Yuma planning areas, as defined in 40 CFR 81.303, which is incorporated by reference in R18-2-210, including tilling of land and application of fertilizers without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne.

Historical Note

Section R18-2-609 renumbered from R18-2-409 effective November 15, 1993 (Supp. 93-4). Amended by final rulemaking at 6 A.A.R. 2009, effective May 12, 2000 (Supp. 00-2). Amended by final rulemaking at 11 A.A.R. 2210, effective July 18, 2005 (Supp. 05-2).

R18-2-610. Definitions for R18-2-611

The definitions in Article 1 of this Chapter and the following definitions apply to R18-2-611:

1. "Access restriction" means restricting or eliminating public access to noncropland with signs or physical obstruction.
2. "Aggregate cover" means gravel, concrete, recycled road base, caliche, or other similar material applied to noncropland.
3. "Artificial wind barrier" means a physical barrier to the wind.
4. "Best management practice" means a technique verified by scientific research, that on a case-by-case basis is practical, economically feasible, and effective in reducing PM_{10} emissions from a regulated agricultural activity.
5. "Chemical irrigation" means applying a fertilizer, pesticide, or other agricultural chemical to cropland through an irrigation system.
6. "Combining tractor operations" means performing two or more tillage, cultivation, planting, or harvesting operations with a single tractor or harvester pass.
7. "Commercial farm" means 10 or more contiguous acres of land used for agricultural purposes within the boundary of the Maricopa PM_{10} nonattainment area.
8. "Commercial farmer" means an individual, entity, or joint operation in general control of a commercial farm.
9. "Committee" means the Governor's Agricultural Best Management Practices Committee.
10. "Cover crop" means plants or a green manure crop grown for seasonal soil protection or soil improvement.
11. "Critical area planting" means using trees, shrubs, vines, grasses, or other vegetative cover on noncropland.
12. "Cropland" means land on a commercial farm that:
    a. Is within the time-frame of final harvest to plant emergence;
    b. Has been tilled in a prior year and is suitable for crop production, but is currently fallow; or
    c. Is a turn-row.

ARTICLE 8. EMISSIONS FROM MOBILE SOURCES (NEW AND EXISTING)

R18-2-801. Classification of Mobile Sources

A. This Article is applicable to mobile sources which either move while emitting air contaminants or are frequently moved during the course of their utilization but are not classified as motor vehicles, agricultural vehicles, or agricultural equipment used in normal farm operations.

B. Unless otherwise specified, no mobile source shall emit smoke or dust the opacity of which exceeds 40%.

Historical Note

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Amended effective February 3, 1993 (Supp. 93-1). Former Section R18-2-801 renumbered to Section R18-2-901, new Section R18-2-801 renumbered from R18-2-601 effective November 15, 1993 (Supp. 93-4).

R18-2-802. Off-road Machinery

A. No person shall cause, allow or permit to be emitted into the atmosphere from any off-road machinery, smoke for any period greater than 10 consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.

B. Off-road machinery shall include trucks, graders, scrapers, rollers, locomotives and other construction and mining machinery not normally driven on a completed public roadway.

Historical Note

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-802 renumbered to Section R18-2-902, new Section R18-2-802 renumbered from R18-2-602 effective November 15, 1993 (Supp. 93-4).

R18-2-803. Heater-planer Units

No person shall cause, allow or permit to be emitted into the atmosphere from any heater-planer operated for the purpose of reconstructing asphalt pavements smoke the opacity of which exceeds 20%. However three minutes' upset time in any one hour shall not constitute a violation of this Section.

Historical Note

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-803 renumbered to Section R18-2-903, new Section R18-2-803 renumbered from R18-2-603 effective November 15, 1993 (Supp. 93-4).

R18-2-804. Roadway and Site Cleaning Machinery

A. No person shall cause, allow or permit to be emitted into the atmosphere from any roadway and site cleaning machinery smoke or dust for any period greater than 10 consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.

B. In addition to complying with subsection (A), no person shall cause, allow or permit the cleaning of any site, roadway, or alley without taking reasonable precautions to prevent particulate matter from becoming airborne. Reasonable precautions may include applying dust suppressants. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means.

Historical Note

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Amended effective February 3, 1993 (Supp. 93-1). Former Section R18-2-804 renumbered to Section R18-2-904, new Section R18-2-804 renumbered from R18-2-604 effective November 15, 1993 (Supp. 93-4).

R18-2-805. Asphalt or Tar Kettles

A. No person shall cause, allow or permit to be emitted into the atmosphere from any asphalt or tar kettle smoke for any period greater than 10 consecutive seconds, the opacity of which exceeds 40%.

B. In addition to complying with subsection (A), no person shall cause, allow or permit the operation of an asphalt or tar kettle without minimizing air contaminant emissions by utilizing all of the following control measures:

1. The control of temperature recommended by the asphalt or tar manufacturer;
2. The operation of the kettle with lid closed except when charging;
3. The pumping of asphalt from the kettle or the drawing of asphalt through cocks with no dipping;
4. The dipping of tar in an approved manner;
5. The maintaining of the kettle in clean, properly adjusted, and good operating condition;
6. The firing of the kettle with liquid petroleum gas or other fuels acceptable to the Director.

Historical Note

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-805 renumbered to Section R18-2-905, new Section R18-2-805 renumbered from R18-2-605 effective November 15, 1993 (Supp. 93-4).

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September 1, 2010

Mr. Matt Blevins
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228-8213

Mr. Matt Blevins:

RE: Draft Environmental Impact Statement for Grapevine Wind

The Arizona Game & Fish Department (Department) has reviewed the Draft Environmental Impact Statement (DEIS) for the proposed Grapevine Canyon Wind Energy Project. The Department generally supports the development of wind energy as a viable source of clean and renewable energy. We believe with proper site placement and safeguards, the benefits of utilizing wind energy outweigh the potential for negative effects to wildlife populations. While we believe that wind can be a viable option for energy, we are concerned that specific sites may have an increased potential for negative impacts to certain breeding, migratory, and wintering species. To address these concerns and to facilitate working relationships with project partners, the Department has created Wind Energy Guidelines entitled *Guidelines for Reducing Impacts to Wildlife from Wind Energy Development in Arizona*. These guidelines can be found on our website at http://www.azgfd.gov/hgis/guidelines.aspx. We appreciate your willingness to use the Guidelines thus far, and the opportunity to comment on this draft document. We look forward to continued discussion regarding wildlife and habitat issues related to this matter.

Below are the Department's comments on the DEIS for the Grapevine project:

S-2.1 As we have communicated previously, the Department considers the proposed Grapevine Canyon Wind Energy Project to be a **Category 3** project under our Wind Guidelines. Category 3 project sites have high or uncertain potential for wildlife impacts involving birds and/or bats, special status species, or other species. Characteristics that indicate high potential wildlife impacts at the Grapevine Canyon project site include the number of proposed turbines and project size, special status species occurring on or adjacent to the site, and the presence of current or historic prairie dog colonies that may concentrate raptor activity. In many respects, the potential impacts to wildlife species and habitats are uncertain in this project area, and therefore the Department recommends:

S-2.2 1. Prior to construction, at least two years of pre-construction bird and bat data be collected with special attention to characterizing seasonal and spatial variability in species' use.

S-2.3 2. Biological inventories be completed for Sites B and C prior to construction in Site A

S-2.4 3. A post-construction monitoring plan designed to assess the impacts of operation on wildlife consistent with the Department's Wind Guidelines, Table 4.

While we recognize that biological inventory and one year of pre-construction data collection have been completed for Site A; we recommend completion of the second year of data collection for Site A as well as completion of inventory and two years of data collection for Sites B and C, not to be conducted concurrently with construction in any part of the project area. The
S-2.5 Department finds the applicants' plan for one year of post-construction monitoring, as articulated on page 56 of the DEIS, to be inadequate. All of the above concerns have been raised by the Department in prior conversations with the project personnel.

Construction phasing

According to the DEIS, Foresight Flying M, LLC expects construction to begin in 2011, preceding completion of pre-construction data for Sites B and C. We request clarification of the phasing proposed throughout the document. On page 10, for example, the authors describe concurrent construction of facility components. It is unclear how the three sites will be treated as
S-2.6 well as the exact extent of Phase 1 and Phase 2 of construction. Additionally, we would like further discussion of the expected construction scenarios for build out to 250 MW versus full build out to 500 MW. We recommend clarification of the project timeline, allowing for two full years of data collection for all three study areas before construction in any study area begins.

Golden eagles

Golden eagles (*Aquila chrysaetos*) are considered a species of greatest conservation need (SGCN) as per the Department's State Wildlife Action Plan. In addition, golden eagles are protected by the Bald and Golden Eagle Protections Act (BGEPA), therefore they should be considered as a special status species. We are concerned that the DEIS underestimates the
S-2.7 potential for negative impacts on golden eagles. As stated earlier, pre-construction surveys for
S-2.2 raptor use should be continued for at least one additional year (total of 2 years pre construction per project area), as golden eagle nesting tends to be cyclic and during some years breeding pairs may not lay eggs in a territory. In addition, other raptor species utilize more than one nest site between years, making multi-year surveys important for assessing impacts to a number of species.

S-2.8 The BGEPA requires specific authorizations and resource protection measures not addressed in Tables 1.3-2 and 2.7-1 of the DEIS. Status under the Act should be acknowledged for both bald and golden eagles throughout the document. Further, standards established in the act, such as a 10-mi project area buffer of analysis where eagles are affected, should be followed. The DEIS proposes a two-mile buffer for construction activities around a nest (pp 94), a distance that is likely to be insufficient. Additionally, the authors omitted golden eagles from Table 4.2-2; golden eagles should be considered in the section on past, present, and reasonable foreseeable
S-2.9 future effects. We recommend consultation with USFWS to determine appropriate measures to
S-2.8 address bald and golden eagles under BGEPA, including the development of advanced conservation practices (ACPs). The ACP document should address prairie dog towns, nest sites, and other factors affecting golden eagle movement and survival.

Pronghorn

The Grapevine Canyon project area provides important big game habitat in this region and has been a focal management area for the Department. Since the early 1990s, we have made significant investments to research the declining pronghorn (*Antilocapra americana*) herds and to implement extensive habitat improvement projects to increase the population. Many of these restoration projects have occurred within and adjacent to the project area, which is known to be utilized by pronghorn. Language in the DEIS underestimates the uncertainty regarding potential negative impacts the project may have on big game and their habitats. We are aware of only one study, conducted by West, Inc. in Wyoming where pronghorn populations are generally larger, that indicates some big game resilience to wind development. We caution against generalizing such findings to northern Arizona grasslands and recommend mitigating support for further research and monitoring to assess the effects of wind development on big game species.

S-2.10

The Department recognizes the authors' inclusion of Anderson Mesa pronghorn concerns in the DEIS. We would like to emphasize that the data we provided the applicant are from a study not designed specifically to assess movement through the project area. The data do demonstrate that individual animals move through all three project study areas (A, B, and C), but were not collected explicitly to assess the degree to which pronghorn utilize the area or to measure the potential impacts of development on pronghorn movement, behavior, or reproductive success. At this point, we simply cannot say that the project will not have impacts of big game movement or populations. Therefore, the Department recommends Foresight's support for further Game & Fish research, specifically aimed at better understanding the impacts of wind project construction and operation on big game, including pronghorn. Our Research Branch has internally approved a research proposal to this end and requests further communication with the interested parties to discuss funding and study implementation as a form of mitigation.

S-2.10

S-2.10

Prairie dogs

Game & Fish surveys from 2007 located active prairie dog colonies in Study Area A, as the DEIS describes, but also located colonies in Study Area C. Page 102 of the DEIS concludes that raptor mortality risk is likely to be lower in Study Areas B and C, based on the assessment that prairie dog numbers are lower in these locations. This assertion is made without the benefit of inventory for Area B or C. The presence of prairie dogs in Area C, in addition to the topographic features within Study Area B, lead us to suspect that the risk of raptor mortality may be similar or even greater in Study Areas B and C than it is in Study Area A. The Department recommends that inventory and two full years of bird and bat data be collected in Study Areas B and C *before* construction begins anywhere within the project area.

S-2.11

Bats

In order to accurately describe the bat populations within the state, contacting the state wildlife agency, rather than an NGO list, is a more efficient and accurate means (p. 95). In addition, the Department recognizes 28 species of bats that occur in Arizona (not 30).

S-2.12

Although "no known bat hibernaculum or roosts of importance have been noted within the vicinity of the wind park study area", it is important to note that approximately half of AZ's 28 species hibernate, and that there are approximately 10 or fewer known hibernacula for all

S-2.13

S-2.13 hibernating bat species in AZ; therefore, saying "no known bat hibernacula" is certainly not an indication that there's an absence of those type of roosts (p. 104).

With respect to this statement, "However, if the first year's monitoring suggests an extraordinary fatality rate or where weather conditions are highly variable to substantially…" (Page 56), the
S-2.14 Department requests that project personnel define "extraordinary fatality rate". We recommend that rate might be ≥ 2 bats/turbine/year.

Big Free-Tailed Bat

S-2.15 The Department disagrees that the potential for occurrence of the big free-tailed bat *(Nyctinomops macrotis)* is "moderate". This species can fly great distances between roosting and foraging areas therefore we would recommend that potential for occurrence is "High" within the project area. (DEIS Vol II, Appendix D.1 p. 53).

Allen's big-eared bat

S-2.16 With respect to Allen's big-eared bat, we disagree with the finding that the potential for occurrence is "low". Because of the potential for this species to occur in adjacent areas, and because this bat can easily travel 20 miles one way in a night between forage and roosting areas, there is a "high" likelihood for this species occurrence (Page 54). The Department recommends that where Allen's lappet-browed bats are referenced in the DEIS, that project personnel articulate their ability to fly long distances and increase their potential to occur to reflect "high".

S-2.17 The Department disagrees that the proposed transmission line project will not affect breeding habitat or important potential hibernacula for the Allen's lappet-browed bat. Although there are no caves and mines used by the species for roosting, present within the transmission line footprint, this species may pass through the transmission line area in transit between foraging areas in the surrounding region. Lastly, we have no records in this state for Allen's lappet-browed bat hibernacula, therefore at this time it is impossible to evaluate many issues associated with effects to this species.

Met towers

S-2.18 As articulated in our prior scoping comments, the Department requests that met towers be unguyed and free-standing (not lattice type). Where guy wires are necessary, we ask that BFDs be used. For aircraft safety, all met tower locations should be provided to the Department. For
S-2.19 towers that are on site for more than one year, we recommend that carcass searches be implemented, especially during the bird migration period. We further recommend acoustical monitoring across seasons with an emphasis on bat migration periods (August 16 – October 31). The applicant should work with the Department to determine the extent of acoustical monitoring that is appropriate to assess bat impacts.

Turbine Construction, turbine arrangement, and operating schedule

S-2.20 The Grapevine project area is located within pronghorn fawning habitat. If possible, the Department recommends that project personnel considering avoiding construction during March 15- May 31st. In addition, we want to emphasize the importance of flexibility to arrange and operate turbines in such a way that impacts on wildlife can be avoided, minimized, and/or

S-2.21 mitigated. As articulated in our Wind Guidelines, negative impacts on wildlife can be reduced with tower configurations that utilize clustering to minimize gaps and that incorporate non-bladed pylons at string edges.

Page 27 of the DEIS references an operating schedule of 24 hours per day, 365 days per year.
S-2.22 We request the applicant consider greater flexibility to allow particular turbines to be turned off during certain times to avoid negative impacts on wildlife, particularly migratory birds or mammals. Curtailment strategies, such as reducing cut-in speeds, may be another effective mitigation strategy to reduce bat fatalities (Arnett et al. 2010). Pre- and post-construction studies are expected to be particularly useful in informing turbine arrangement and operating schedules.

Rehab and re-vegetation of sites – The Department is encouraged that most associated infrastructure for the wind project will be located underground. With respect to ground disturbing activities that require re-vegetation, the Department recommends the following: Because the Grapevine area is prone to invasion by several weedy species, most notably cheat
S-2.23 grass *(Bromus tectorum),* the Department would like project personnel to consider monitoring of the disturbed sites for multiple years ensuring that cheat grass does not become established. In the event that it does, there are annual specific herbicides such as Oust™ and Plateau™ that can
S-2.24 be used effectively to eliminate its occurrence. For seeding techniques and species assemblages to consider, the Department recommends referring to Monsen, et al. 2004, *Restoring Western Ranges and Wildlands.*

Trenching and borrow pits
The Department recommends several strategies to minimize negative impacts associated with trenching and ditches during construction. Trenches should be covered or back-filled as soon as possible, and should always be covered overnight. Activities should be concentrated so that the area affected by digging or backfilling at any one time is as small as possible. Monitor pits and trenches often during and after construction. Work with the Department to determine the best
S-2.25 time of year to dig with minimal impacts on wildlife. Incorporate escape ramps in ditches or fencing along the perimeter to deter small mammals and herpetofauna (snakes, lizards, etc) from entering ditches. Escape ramps should be constructed at least every 90 meters and can be short lateral trenches sloping to the surface or wooden planks extending to the surface. The slope should be less than 45 degrees (100%). See NMDGF's Guidance for Oil and Gas Development (full citation below) for further guidance.

Access:
The DEIS states on page 21 that "Service road public access would be based on consultation with State trust and private landowners. Select wind park access or service roads that do not
S-2.26 access public lands may be gated with limited public access". The Department requests that project personnel work with the Department to discuss any limited access to state and private lands as access into these lands are crucial in meeting hunting objectives (especially elk and pronghorn).

The Department appreciates the opportunity to comment at this draft stage of the EIS process and looks forward to working with the interested parties to incorporate our concerns for wildlife

in the final document. Please contact me with any further questions or concerns that you may have.

Sincerely,

Andi Rogers
Habitat Specialist
Arizona Game & Fish Department
3500 S. Lake Mary Rd
Flagstaff, AZ 86001
(928) 214-1251

Citations:

Arnett, E. B., M. M. P. Huso, J. P. Hayes, and M. Schirmacher. 2010. Effectiveness of changing wind turbine cut-in speed to reduce bat fatalities at wind facilities. A final report submitted to the Bats and Wind Energy Cooperative. Bat Conservation International. Austin, Texas, USA.

New Mexico Department of Game and Fish. 1994. Guidelines for Oil and Gas Development and Fish and Wildlife Resources.

Monsen. S. B., R. Stevens, N. Shaw. Restoring Western Ranges and Wildlands. 2004. Gen. Tech. Rep. RMRS- GTR-136. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Vol 1-3.

White Mountain Apache Tribe Heritage Program
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1 (928) 338-3033 Fax: (928) 338-6055

To: Mr. Matt Blevins – Western Area Power Administration
Date: July 27, 2010
Project: Grapevine Canyon Wind Project Draft Environmental Impact Statement (DOC/EIS-0427)

……

The White Mountain Apache Historic Preservation Office (THPO) appreciates receiving information on the proposed project, dated July 20, 2010 In regards to this, please attend to the checked items below.

► ***There is no need to send additional information unless project planning or implementation results in the discovery of sites and/or items having known or suspected Apache Cultural affiliation.***

☐ The proposed project is located within an area of probable cultural or historical importance to the White Mountain Apache Tribe (WMAT). As part of the effort to identify historical properties that maybe affected by the project we recommend an ethno-historic study and interviews with Apache Elders. The Cultural Resource Director, ***Mr. Ramon Riley*** would be the contact person at (928) 338-4625 should this become necessary.

► Please refer to the attached additional notes in regards to the proposed project:

We have received and reviewed the draft data Environmental Impact Statement for the proposed Grapevine Canyon Wind Project which is located 28 miles southeast of Flagstaff, Arizona, and we've determined the proposed actions for the above mentioned project ***will not have an effect*** on the White Mountain Apache tribe's Cultural Heritage Resources and/or historic properties and at this point we do not believe it is necessary to contact and/or include the tribe any further. Regardless, we further recommend that any/all ground disturbance should be monitored ***if*** there are reasons to believe that human remains and/or funerary objects are present, if such remains and/or objects are encountered all construction activities should be stopped and the proper authorities and/or affiliated tribe(s) be notified to evaluate the situation.

T-1.1

We look forward to continued collaborations in the protection and preservation of places of cultural and historical significance.

Sincerely,

Mark T. Altaha
White Mountain Apache Tribe
Historic Preservation Officer
Email: markaltaha@wmat.us

September 7, 2010

John R. Holt, Environmental Manager
Attention: Matt Blevins
Department of Energy, Western Area Power Administration
P.O. Box 6457
Phoenix, Arizona 85005-6457

Re: Grapevine Canyon Wind Project Draft Environmental Impact Statement (DOE/EIS-0427)

Dear Mr. Holt,

This letter is in response to your correspondence dated July 20, 2010, regarding an enclosed Foresight Flying M LLC, Western Area Power Administration (WAPA), and Coconino National Forest (CNF) Grapevine Canyon Wind Project Draft Environmental Impact Statement (DEIS). The Hopi Tribe claims cultural affiliation to prehistoric cultural groups in this area of potential effect. The Hopi Cultural Preservation Office supports the identification and avoidance of prehistoric archaeological sites and we consider the prehistoric archaeological sites of our ancestors to be Traditional Cultural Properties. Therefore, we appreciate Western Area Power Administration and Coconino National Forest's continuing solicitation of our input and your efforts to address our concerns.

The Hopi Cultural Preservation Office previously responded to your October 5, 2009, and December 3, 2009, correspondences on this proposal in the enclosed letters dated October 28, 2009, and April 28, 2010. We have received and reviewed the draft Programmatic Agreement and Preliminary Draft Class I Cultural Resources Overview. We also participated in a site visit on February 9, 2010, and had two consultation meetings on April 21, 2010, and August 17, 2010, with representatives of the Western Area Power Administration, the proponents and contractors. We understand the proposal consists of a wild generating facility, a transmission line, and a switchyard.

,

In our April 28, 2010, letter we reviewed the Class I Overview and stated we understood the proposal involves 50,967 acres of State land, 44,035 acres of private land and 275 acres of Forest land. We requested a 100% Class III survey of the area of potential effect, and that the areas of proposed disturbance be defined. We expressed our concern about adverse effects on cultural and biological resources, and we requested that a Native American Graves Protection and Repatriation Act plan of Action be developed.

The Hopi Cultural Preservation Office has now reviewed the DEIS and offer the following comments:

Regarding cultural resources, on pages xvi, 48, and 189, Tables ES5.1, 2.5-1 and 4.2-2, we consider the effects to Cultural Resources, areas of interest to Native Americans, and visual impacts on Traditional Cultural Properties to be adverse. We do not believe the proposed Programmatic Agreement will ensure protection of National Register eligible archaeological sites and Traditional Cultural Properties, as asserted on page 57.

T-2.1
T-2.2

As we stated previously, we understand 678 previously recorded cultural resources have been identified in the cultural resources evaluation area, and that the area has only had a small percentage of Class III survey. We do not believe that based on proposed Programmatic Agreement, "there would be no significant impacts to, or loss of a site of archaeological, Tribal or historical value that is listed, or eligible for listing, on the NRHP," or that "there would be no adverse effect on cultural sites" as asserted on page 112. If there are no adverse effects anticipated, why has a Programmatic Agreement be developed to mitigate adverse effects to unidentified cultural resources? This determination is based on insufficient data and is premature.

T-2.3

On page 180, the DEIS acknowledges "Any unavoidable adverse impacts to cultural resources cannot be determined until the results of the Class III Survey and traditional Cultural Properties Survey are completed." On page 194, however, the DEIS asserts "Because the proposed action is not likely to destroy NRHP eligible sites, there would be no direct contribution to cumulative effects to cultural resources."

T-2.4

Therefore, we have determined that this proposal will have significant adverse effects on Hopi ancestral National Register eligible archaeological sites and Hopi Traditional Cultural Properties.

T-2.5

Regarding Biological Resources, at our administrative meetings and our April 28, 2010, letter, we expressed concern regarding the impact of the wind farm on eagles and migratory birds. We have reviewed the Wildlife and Botanical Report, and we consulted with David Tidhar of Western EcoSystems Technology, Inc. on August 17, 2010.

There are Hopi eagle shrines adjacent to Study Area A and a two mile buffer zone and we continue to be concerned of their potential mortality from 500 foot tall wind turbines. After reviewing the DEIS, it is clear that there will be eagle, raptor and other bird mortality as a result of this project. A "formal post-construction monitoring study designed to estimate and address avian and bat mortality" is a body count, indicating that eagle, raptor, and bird mortality is a certain result of this proposal. The only question is, how many?

T-2.6

The DEIS repeatedly states "Construction and operation of the proposed project may result in direct impacts to the birds, raptors and bats through collision or electrocution with the wind turbines and power lines" and cites the 2006 Suggested Practices for Avian Protection on Powerlines. However, we are also aware of the U.S. Fish and Wildlife Service April, 2010, Wind Turbine Guideline Advisory Committee Recommendations to the Interior Secretary and the new State Game and Fish Department guidelines regarding wind farms and bird mortality. This DEIS and the project specifications need to be revised to reflect these new recommendations.

T-2.6

Therefore, we have determined that this proposal will cause significant adverse effects to biological resources significant to the Hopi Tribe. We do not support a crossing of Diablo Canyon, or any disturbance, within the Canyon, or on the east side of the Canyon.

T-2.7

This DEIS has no alternatives other than the Proposed Alternative and alternative transmission lines, and is therefore inadequate pursuant to the National Environmental Policy Act. This DEIS is general, the proposed project is phased, and the proposed project area is oversized.

T-2.8
T-2.9

And therefore, based on potential adverse effect to cultural and biological resources, and the lack of alternatives, we support the No Action Alternative in this DEIS. We recommend WAPA and CNF develop an alternative that defines the project area as Study Area A and eliminates Study Areas B and C from further consideration.

T-2.10

If you have any questions or need additional information, please contact Terry Morgart at the Hopi Cultural Preservation Office at 928-734-3619 or tmorgart@hopi.nsn.us. Thank you for your consideration.

Respectfully,

Leigh J. Kuwanwisiwma, Director
Hopi Cultural Preservation Office

Enclosures: October 28, 2009; April 28, 2010 letters

xc: Forest Supervisor, Coconino National Forest
Governor, Zuni Tribe
Arizona State Historic Preservation Office

THE NAVAJO NATION

Joe Shirley, Jr.
President

Ben Shelly
Vice-President

August 30, 2010

Mike Dechter
Coconino National Forest
Forest Supervisor's Office
1824 South Thompson St.
Flagstaff, AZ 86004

Dear Mr. Dechter:

On July 20, 2010, the Historic Preservation Department – Traditional Culture Program (hereafter, HPD-TCP) received the proposed Department of Energy (DOE), Western Area Power Administration in cooperation with the U.S. Department of Agriculture, Forest Service, Coconino National Forest and the Arizona State Land Department's Grapevine Canyon Wind Project Draft Environmental Impact Statement (DOE/EIS-0427).

We have some concerns with the proposed project. After cross-referencing the HPD-TCP Sacred Sites Database, there are numerous Cultural Sacred Site located within the proposed project area.

T-3.1 The Nation understands the project area lies within both private and State trust lands, so all we can emphasize is our concerns with the proposed project area. We request the Navajo Nation be kept updated with the progress of the proposed project.

T-3.2 If the proposed project inadvertently discovers Navajo habitation sites, plant gathering areas, human remains and objects of cultural patrimony, the HPD-TCP request that we be notified respectively in accordance with the Native America Graves Protection and Repatriation Act (NAGPRA).

In conclusion, the HPD-TCP appreciates the Department of Energy for consulting the Navajo Nation pursuant to 36 CFR 800.1 (c)(2)(iii). If you have any questions, concerns, or require additional information, do not hesitate to contact me at 928-871-7750. Thank you for your cooperation.

Sincerely,

Tony H. Joe, Jr., Supervisory Anthropologist
Traditional Culture Program
Historic Preservation Department

Cc TCP 10-643
Department of Energy

CREDA
Colorado River Energy Distributors Association

Leslie James
Executive Director
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August 27, 2009

Mary Barger
Western Area Power Administration
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Fax: 602-605-2630
E-mail: GrapevineWindEIS@wapa.gov

RE: Scoping Comments – Grapevine Canyon Wind Project

Dear Ms. Barger:

In response to Western Area Power Administration's (Western) Notice of Intent to Conduct an Environmental Impact Statement, published in the Federal Register July 24, 2009 (Vol. 74, No. 141), the Colorado River Energy Distributors Association (CREDA), offers the following comments.

CREDA's members include the majority of firm electric service customers of the Colorado River Storage Project (CRSP), which have entered into long-term contracts (2024) for the delivery of resources from the CRSP. The proposed Grapevine Project is anticipated to interconnect a new 345 kV transmission line and new switchyard with the Glen Canyon-Pinnacle Peak transmission line, which is a key element of the CRSP power and transmission delivery system. As part of Western's socio-economic evaluation of this proposal, it should evaluate the potential impacts on Western's current firm electric and transmission service customers, from operational and rates perspectives. Analysis of specific cost allocation and cost responsibility methodologies should be employed.

The project proponent indicated at the scoping meeting that it anticipates selling the project's expected 500 MW of output to local and regional entities. Western's analysis should include how the addition of this resource will affect system reliability and operational impacts, including control area and other issues associated with the integration of an intermittent resource, on an already constrained transmission path.

Please include CREDA in any future distribution of materials and information on this proposed project.

Sincerely,

/s/ Leslie James

Leslie James
Executive Director

Cc: CREDA Board

CREDA
Colorado River Energy Distributors Association

ARIZONA
Arizona Municipal Power Users Association

Arizona Power Authority

Arizona Power Pooling Association

Irrigation and Electrical Districts Association

Navajo Tribal Utility Authority (also New Mexico, Utah)

Salt River Project

COLORADO
Colorado Springs Utilities

Intermountain Rural Electric Association

Platte River Power Authority

Tri-State Generation & Transmission Association, Inc. (also Nebraska, Wyoming, New Mexico)

Yampa Valley Electric Association, Inc.

NEVADA
Colorado River Commission of Nevada

Silver State Energy Association

NEW MEXICO
Farmington Electric Utility System

Los Alamos County

City of Truth or Consequences

UTAH
City of Provo

City of St. George

South Utah Valley Electric Service District

Utah Associated Municipal Power Systems

Utah Municipal Power Agency

WYOMING
Wyoming Municipal Power Agency

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September 7, 2010

Mr. Matt Blevins
Western Area Power Administration
Mail: P.O. Box 281213, Lakewood, CO 80228-8213
E-mail: GrapevineWindEIS@wapa.gov

RE: Comments - Grapevine Canyon Wind Project Draft EIS

Dear Mr. Blevins:

The Colorado River Energy Distributors Association (CREDA), offers the following comments on the Draft Environmental Impact Statement (DEIS) dated July 2010 for the Grapevine Canyon Wind Project (DOE/EIS-0427). These comments should be considered supplementary to the comments we submitted on August 27, 2009 during the scoping process (attached).

1) Page 4: One of the project's objectives is to "interconnect to an electrical transmission system with available capacity that ties into the regional electric grid." Has a determination been made by Western Area Power Administration, in response to a request for transmission service, that the underlying transmission system has sufficient transmission capacity to accommodate the power flows from this project with no reliability or transfer capability, or contract rights impacts to existing uses? Reference is made on page 5 to transmission and system studies. Have these studies been completed, and if so, what are the findings? Are there system upgrades or additional facilities necessary to accommodate the project? If so, there is no reference with the current project scope. **U-1.1** **U-1.2**

2) Page 8, Table 1.4-1: The Socioeconomic portion of this table incorporates by reference comments made by CREDA during scoping, and refers to sections 2.7, 3.7 and 3.9. However, those subsequent sections do not specifically address the submitted comments. **U-1.3**

Please include CREDA in any future distribution of materials and information on this proposed project.

Sincerely,

/s/ Leslie James

Leslie James
Executive Director

Cc: CREDA Board

From: Slick David P (Dave) [Dave.Slick@srpnet.com]
Sent: Tuesday, September 07, 2010 5:21 PM
To: GrapeVineWindEIS GrapeVineWindEIS
Cc: Duckworth Charles B (Charlie); Brickley Daniel A (Dan); Coggins John D; Mellentine Stephen B
Subject: September 2010 Grapevine Canyon Wind Project EIS Comments
Attachments: Grapevine Canyon Wind Project EIS Process Comments

September 7, 2010

Mr. Matt Blevins

Western Area Power Administration
P.O. Box 281213

Lakewood, CO 80228-8213

Mr. Blevins,

SRP submits the following comments about the draft Grapevine Canyon EIS report.

1. The EIS does not explain how Western would be able to support proposed project objectives from a transmission rights perspective.

U-2.1

According to Western's OASIS site, no long term firm transmission rights are available on the Glen Canyon – Pinnacle Peak path in the southbound direction, and by 2012 only 156 mw of long term firm transmission rights are available on the Glen Canyon – Pinnacle Peak path in the northbound direction. Furthermore, according to Western's OASIS site, adequate northbound rights for the proposed full build out of the project to 500 mw are not be available until 2019.

Foresight's stated objectives include interconnecting with "an electrical transmission system with available capacity that ties into the regional electric grid" and providing a "utility-scale wind generating facility that would help achieve state and/or regional renewable energy standards". With the limited number of parties subject to state and/or regional renewable energy standards that could take delivery from Foresight at Glen Canyon, and the lack of transmission rights available to support delivery of any project output to Pinnacle Peak, the EIS does not appear to explain how Foresight's stated objectives could be met.

U-2.2

2. Responses to previously submitted comments are not provided.

On page 8 of Chapter 1 "Purpose and Need", the EIS claims that responses to previously submitted socioeconomic comments are provided in sections 2.7, 3.7 and 3.9 of the EIS. However, none of SRP's previously submitted comments (attached) are addressed in these sections of the report.

U-2.3

<<Grapevine Canyon Wind Project EIS Process Comments>>

Respectfully submitted,

Dave Slick

Manager of Strategic Projects

Energy Management & Information

SRP

(602) 236-2082

IRRIGATION & ELECTRICAL DISTRICTS ASSOCIATION OF ARIZONA

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September 7, 2010

Mr. Matt Blevins
Western Area Power Administration
P.O. Box 281213
Lakewood, Colorado 80228-8213

Re: Comments on the Proposed Grant of Interconnection to the Glen Canyon – Pinnacle Peak 345-kV Transmission Lines; Comments on the Draft Environmental Impact Statement for the Grapevine Canyon Wind Project, 75 Fed.Reg. 43161 (July 23, 2010)

Dear Mr. Blevins:

The Irrigation & Electrical Districts Association of Arizona (IEDA) is an Arizona non-profit association whose members purchase federal hydropower from the Western Area Power Administration (Western) and the Arizona Power Authority. Fifteen of our members and associate members contract with Western for power from the Colorado River Storage Project (CRSP). That power is delivered to IEDA members and other Southern Division CRSP contractors on the Glen Canyon - Pinnacle Peak 345 –kV system. Since Western is contemplating whether to grant an interconnection to this proposed project on this very system, our members have a direct and abiding interest in the outcome of the process under the National Environmental Policy Act (NEPA) and Western's ultimate decision.

In our August 25, 2009 comments on the scoping of the Environmental Impact Statement for this major federal action, we objected to Western considering environmental impacts of the interconnection of this wind farm to the Glen Canyon – Pinnacle Peak system without considering the impacts of providing transmission service once that interconnection had been made. We expressed our concern about constraints on the transmission system and the lack of analysis of impacts on existing customers and the reliability of the system. We urged Western to expand its analysis to cover the possible impacts of transmission service while looking at the localized impacts of the interconnection itself. Obviously, our comments fell on deaf ears.

Even a cursory reading of the Draft Environmental Impact Statement (DEIS) shows that Western intends to address the request for interconnection separately from what is anticipated to be thereafter a request for transmission service for this project, not only as to the two federal applications required to deliver the anticipated wind energy to market but as to the environmental impacts associated with granting both applications.

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It is certainly true that under FERC Order 888 and 889 and Western's Open Access Transmission Tariff (OATT), Western may entertain an interconnection request separately from a transmission service request. The logic of such separate processes is obvious. A generator wishing to connect to a system may market its generation resource on a basis of requiring the purchaser to arrange for transmission. In such a situation, the generation builder would not contemplate making application for transmission service from a transmission system owner/operator.

But that is not this case. One of the stated purposes in the DEIS for this project is "[t]o interconnect to an electrical transmission system with available capacity that ties into the regional grid." (DEIS, p.4.) This intent is further explained on that same page by articulating the project developer's need for transmission service "so that the energy produced could be marketed to utility companies in Arizona and other western States to meet their State portfolio standards and energy requirements." (Ibid.)

Western acknowledges that transmission service will be required in this instance and anticipates receiving a request for transmission service. Western acknowledges the relationship between the pending interconnection request and the providing of transmission service: "If there is available capacity in the transmission system, Western provides transmission services through an interconnection request." (Ibid.)

The need to assess the impacts on system reliability and existing customers is acknowledged on the very next page (p.5):

> "Protecting Transmission System Reliability and Service to Existing Customers: Western must ensure that existing reliability and service are not degraded. Western's Large Generator Interconnection Procedures provide for transmission and system studies to ensure that system reliability and service to existing customers are not adversely affected by new interconnections. These studies also identify system upgrades or additions necessary to accommodate the proposed project and ensure that they are in the project scope."

Having reached this point in the DEIS, we anticipated reading that the necessary studies were completed and our concerns were unfounded. We were led further down this primrose path when we got to page 8 and saw that the impact chart related to socioeconomic impacts included our prior comments and those of the Colorado River Energy Distributors Association (CREDA) about customer impacts, referring the reader to three later sections of the DEIS.

However, our optimism was short-lived. None of the three sections cited in the DEIS says anything at all about customer impacts or system reliability or any possible studies related to those subjects.

U-3.1 The studies are mentioned in Section 2.1.1. on page 9 as being 1) an Interconnection Feasibility Study, 2) an Interconnection System Impact Study, and 3) an Interconnection Facilities Study. Western states that, based on the completion of these studies, it proposes to modify its transmission system with the addition of the switchyard and the interconnection to the Glen Canyon – Pinnacle Peak lines. Other than the reference on page 5, this is the only place in the entire DEIS where these studies are mentioned. Not only are these studies not otherwise mentioned, there is no description of, analysis of,

U-3.1 or cumulative analysis of any impacts to existing customers or to system reliability mentioned at all in this document. Nor are system reliability or customer impacts assessed in the analysis of irreversible and irretrievable commitments of resources even though the document defines this project as being in place for at least 25 years. The studies mentioned are also not listed in the references for the DEIS.

We are forced to the conclusion that, if these studies are underway, they have not been completed, or if completed, they have been inexplicably withheld from this analysis. Our concern is heightened by the statement on page 9: "Transmission service study work is underway and ongoing."

U-3.2 This piecemeal approach to environmental analysis is captured quite succinctly by the following statement (p.9):

> "Details, requirements, and environmental impacts for any other system improvements are unknown at this time, since they would be dictated by the on-going transmission service studies. These studies may identify additional upgrades needed to accommodate the transmission service needs, including modifications at other existing Western substations that could include, but would not be limited to, installing new control buildings; new circuit breakers and controls; adding new electrical equipment, which would include installing new concrete foundations for electrical equipment and buildings, substation bus work, cable trenches, buried cable grounding grid, and new surface grounding materials; and/or replacing existing equipment and/or conductors with new equipment and/or conductors to accommodate the requests for transmission service."

U-3.3 The very next sentence (p.10) sums up the strategy: "If any needed transmission system modifications are identified after the completion of the EIS, Western and the Forest Service would address the environmental impacts of these modifications in accordance with regulatory requirements."

The above quotes are followed by the penultimate *non sequitur*: "The transmission lines have capacity available to transmit additional electricity." (p.10.) Of course the statement doesn't say how much or in which direction or whether the existing capacity can carry the generation contemplated by the proposed project. It is a bald, totally unsupported statement. It follows on the heels of Western's tacit admission that it hasn't completed its studies and does not know whether there is sufficient available transfer capability for this project, or conversely, that it has completed these studies but is withholding the results.

U-3.4 We recognize that the project is being located in a fashion so that it will interconnect to the Glen Canyon – Pinnacle Peak lines. In order for the project to succeed, it must have that interconnection. Just as importantly, in order for the project to succeed, it must have transmission service from Western to get the generation to the markets contemplated by the developer.

In this situation, Western has no choice but to complete the transmission-related studies, analyze the environmental impacts, including socioeconomic impacts, and report those in <u>this</u> Environmental Impact Statement. Indeed, if these impacts are significant, Western may need to republish a Draft Environmental Impact Statement. 40 C.F.R. § 1502.9(a). In any event, it cannot avoid having the environmental analysis include impacts on system reliability and on existing customers.

U-3.4 Western must analyze the effects of providing transmission service in this situation because the project purposes cannot be accomplished without such transmission service. These are direct effects of the proposed action to approve interconnection. 40 C.F.R. § 1508.8(a). Even if one were to define these as "indirect effects", they must be analyzed. Sylvester v. U.S. Army Corps of Engineers, 884 F.2d 394, 400 (9th Cir. 1989). Where there is such a close relationship between the approval of interconnection and the granting of transmission service, the proposed and the second action are "two links of a single chain." Sylvester, 884 F.2d at 400. Clearly the transmission service requirement would generate effects "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8(b). Bifurcating the application process in this instance does not allow bifurcation of the environmental analysis under NEPA. City of Davis v. Coleman, 521 F.2d 661, 674 (9th Cir. 1975); Border Power Plant Working Group v. Department of Energy, 260 F.Supp.2d 997, 1013-1016 (S.D. Calif. 2003).

Thank you for the opportunity to comment on this important and potentially significant impact to the Colorado River Storage Project transmission system. Please let us know when the above-referenced transmission studies have been completed and the analysis of impacts to system reliability and to the existing customers has been drafted.

Sincerely,

/s/

Robert S. Lynch
Counsel and Assistant Secretary/Treasurer

RSL:psr
cc: Tim Meeks, Administrator, WAPA
Darrick Moe, Regional Director, WAPA
Leslie James, Executive Director, CREDA
IEDA Presidents/Chairmen and Managers